Department for
Business, Energy
& Industrial Strategy

Carbon Capture, Usage and Storage

Industrial Carbon Capture business models summary

December 2022

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Contents

Introduction

The summary set out in this document outlines the key design aspects of the Industrial Carbon Capture (ICC) business models (including for the waste management sector). These business models have been developed following our initial consultation on possible new business models for carbon capture usage and storage (CCUS) held in July 2019[1], with business model development updates released between December 2020 and July 2022, following engagement with CCUS expert groups, industry and relevant regulators.

The proposed business models summarised in this document incorporate a number of additional positions developed subsequent to the April and July 2022 policy updates and April 2022 consultation. These documents should be read in conjunction with the earlier December 2020, May 2021, October 2021, November 2021, April 2022, July 2022 ICC and Waste ICC business model updates[2] and indicative Grant Funding Agreement (GFA) Heads of Terms[3].

This business model update is being published alongside a government response to the consultation on the ICC business models, the ICC Contract, the Waste ICC Contract's Biogenic CEMS rider, the Waste ICC Contract's Summary Table, the Greenhouse Gas Removal Credits Annex, ICC Form of Supply Chain Report Spreadsheet and the Carbon Capture and Storage Infrastructure Fund (CIF) GFA.

A number of the proposed ICC contractual provisions have been outlined in the previous business model updates and, where relevant, references to those updates and the additional information and policy rationale they provide have been included. In addition, there are new provisions included in the ICC Contract and Waste ICC Contract proposal that were not included in the April ICC Contract or July Waste ICC contract riders or articulated in the earlier ICC business model updates. Further details have been provided in this update where appropriate.

[1] https://www.gov.uk/government/consultations/carbon-capture-usage-and-storage-ccus-business-models
[2] https://www.gov.uk/government/publications/carbon-capture-usage-and-storage-ccus-business-models
[3] https://www.gov.uk/government/publications/design-of-the-carbon-capture-and-storage-ccs-infrastructure-fund

Disclaimer

This document sets out further details on the government's current proposals on the potential business model for industrial facilities (including waste management facilities) with carbon capture usage and storage (CCUS). The proposals, as set out in the document and accompanying updates published alongside this document, in whatever form they are expressed, are indicative only and do not constitute an offer by government and do not create a basis for any form of expectation or reliance.

The updates published within this document, and accompanying contracts, are not final and are subject to further development by the government, and approval by Ministers, in consultation with relevant regulators and the devolved administrations, as well as the development and Parliamentary approval of any necessary legislation, and completion of necessary contractual documentation. We reserve the right to review and amend all provisions within the document and accompanying updates published alongside this document, for any reason and in particular to ensure that proposals provide value for money (VfM) and are consistent with subsidy control principles.

This document takes into account engagement that has taken place throughout 2021 and 2022, including since the publication of the last ICC Business Model update and consultation in April 2022, and the Waste ICC business model update in July 2022. This includes engagement with the ICC Expert Group, Waste CCS Expert Group, project developers, and other interested parties.

BEIS will continue such engagement as it works to refine its proposals, including engagement with the devolved administrations, to ensure that the proposed policies take account of devolved responsibilities and policies across the UK.

The ICC Contract, Waste ICC Contract's Biogenic CEMS rider and the Waste ICC Contract Summary Table do not constitute definitive drafting of the ICC and Waste ICC Contract terms. BEIS reserves the right to review all provisions set out in the ICC and Waste ICC Contracts, and a number of the provisions and terms which require particular consideration and development have been square bracketed (with footnotes) in the Contract documents.

The ICC Contract, Waste ICC Contract's Biogenic CEMS rider and the Waste ICC Contract Summary Table do not indicate any willingness or agreement on the part of BEIS to enter into, or arrange entry into, the ICC or Waste ICC Contract. The ICC and Waste ICC Contracts do not constitute an offer and is not capable of acceptance.

Business Model Summary

What is the ICC business model

The ICC business models have been designed to incentivise the deployment of carbon capture technology by industrial users who often have no viable alternative to achieve deep decarbonisation. The ICC business models comprise a capital grant (for Track-1 / Phase-2 projects) which will be funded by the £1 billion CIF, and/or ongoing revenue support which will be funded by the Industrial Decarbonisation and Hydrogen Revenue Support (IDHRS) scheme. There are two variants of the revenue support contracts; the 'generic' "ICC Contract" for successful CCS projects from all eligible industrial sectors apart from successful waste management CCS projects, which would be offered the "Waste ICC Contract".

Phase-2 Allocation process

The ICC business model has been developed as part of the wider CCUS Cluster Sequencing process, and projects were able to make submissions for business model support in Phase-2[4] of this process. The application window for Phase-2 closed on 21 January 2022. Projects were initially reviewed to ensure they met the eligibility criteria outlined in the phase 2 guidance; results of this review were announced in March 2022[5].

Projects were then reviewed against the assessment criteria outlined in the Phase 2 guidance. Shortlisted projects were announced in August 2022[6]. Projects that were selected following successful evaluation in Phase-2 of the CCUS Cluster Sequencing Process have been invited to participate in the due diligence and negotiations stage and may ultimately receive business model support subject to final government compliance checks and terms set out in section 7.9 of the Cluster sequencing Phase-2 guidance.

We set out in the Phase-2 guidance document that after the evaluation of submissions and shortlisting, in line with government business case approvals processes, government envisages that there will be a period of negotiation/due diligence in the CCUS Cluster Sequencing process, when shortlisted projects will engage with the Department on a variety of technical and commercial issues. We anticipate that the project-specific terms included in the ICC and Waste ICC Contracts and the CIF GFA will be subject to discussion in this phase.

Further details on the negotiations process can be found in Section 20 of this document.

Purpose

The summary set out in this document outlines the key design aspects of the ICC business models including commercial framework, risk allocation, Contract conditions, business model adaptations for the Waste ICC Contract, and the pre-award process for allocating business

[4] Guidance on the cluster sequencing process: https://www.gov.uk/government/publications/cluster-sequencing-for-carbon-capture-usage-and-storage-ccus-deployment-phase-2

[5] https://www.gov.uk/government/publications/cluster-sequencing-phase-2-eligible-projects-power-ccus-hydrogen-and-icc/cluster-sequencing-phase-2-eligible-projects-power-ccus-hydrogen-and-icc

[6] https://www.gov.uk/government/publications/cluster-sequencing-phase-2-eligible-projects-power-ccus-hydrogen-and-icc/cluster-sequencing-phase-2-shortlisted-projects-power-ccus-hydrogen-and-icc-august-2022

model support. It should be read in conjunction with the December 2020, May 2021, October 2021, November 2021, April 2022 and July 2022 business model updates.

This document is published alongside the government response to the consultation run between April and June 2022, the CIF GFA, and the ICC and Waste ICC contracts. The ICC and Waste ICC Conditions represent a generic contract applicable to all projects where project-specific information and negotiated items will be set out in the Front-End Agreement.

Definitions

Definitions for terminology used throughout this publication can be found in the ICC and Waste ICC Contract update, published alongside this update, unless otherwise defined in this document.

1. ICC Business Model Offer for Track-1 / Phase-2 ICC Projects

Industrial Carbon Capture (ICC) business model support outlined in this document is reflective of the current immaturity of the market in the UK and therefore this model is for Track-1 / Phase-2 ICC projects awarded support via the ongoing Cluster Sequencing Process. The support package that successful projects would be expected to receive through ICC business model support includes:

- An element of capital co-funding through the CIF, for Track-1 / Phase-2 projects and where relevant.
- An ICC Contract to provide ongoing revenue support funded via the Industrial Decarbonisation and Hydrogen Revenue Support (IDHRS) scheme.[7]

It is expected that the Low Carbon Contract Company Ltd (LCCC) will be the ICC Contract Counterparty for the ICC Contracts, subject to successful completion of administrative and legislative arrangements.

Variations to the ICC business model for Carbon Capture Usage/Storage Hybrid projects and Combined Heat and Power (CHP) are set out in Sections 17 – 18.

To note, in previous business model updates, we have outlined variations for Capture-as-a-Service (CaaS) projects. No CaaS projects have been shortlisted for Track 1, and so reference to this has been removed from this update and will be revisited in advance of any Track 2 process.

For the Waste ICC business model, updates to the specific features of this model have been set out in Section 19. All other sections will be relevant to the waste model, unless explicitly stated otherwise.

2. Capital Grant

Capital grants will be available for Track-1 / Phase-2 ICC projects that have applied through Phase-2 of the Cluster Sequencing Process for CCUS deployment.

The range of capital grant funding offered will be up to, but not including, 50% of total capital costs. These costs will not include development (i.e. pre-FEED and FEED) costs. All capital grant funding will be subject to affordability, value for money and subsidy control considerations. It is proposed that financing information provided by applicants in Phase-2 will be used to inform negotiations, during which the amount of any capital grant funding will be agreed. The level of capital grant funding offered to projects will also take into consideration the overall costs to taxpayers (considering both CIF and ongoing revenue support). If requiring projects to accept a minimum level of grant reduces the overall costs to taxpayers of the ongoing revenue support needed, then this approach will also be considered.

[7] The IDHRS scheme was established through the Net Zero Strategy in October 2021 to fund the Industrial Carbon Capture and Hydrogen Business Models: https://www.gov.uk/government/publications/net-zero-strategy

An indicative Heads of Terms for the CIF GFA was published in November 2021.[8] The full GFA has been published alongside this document.

3. Capex

For Waste ICC projects, please refer to Section 19

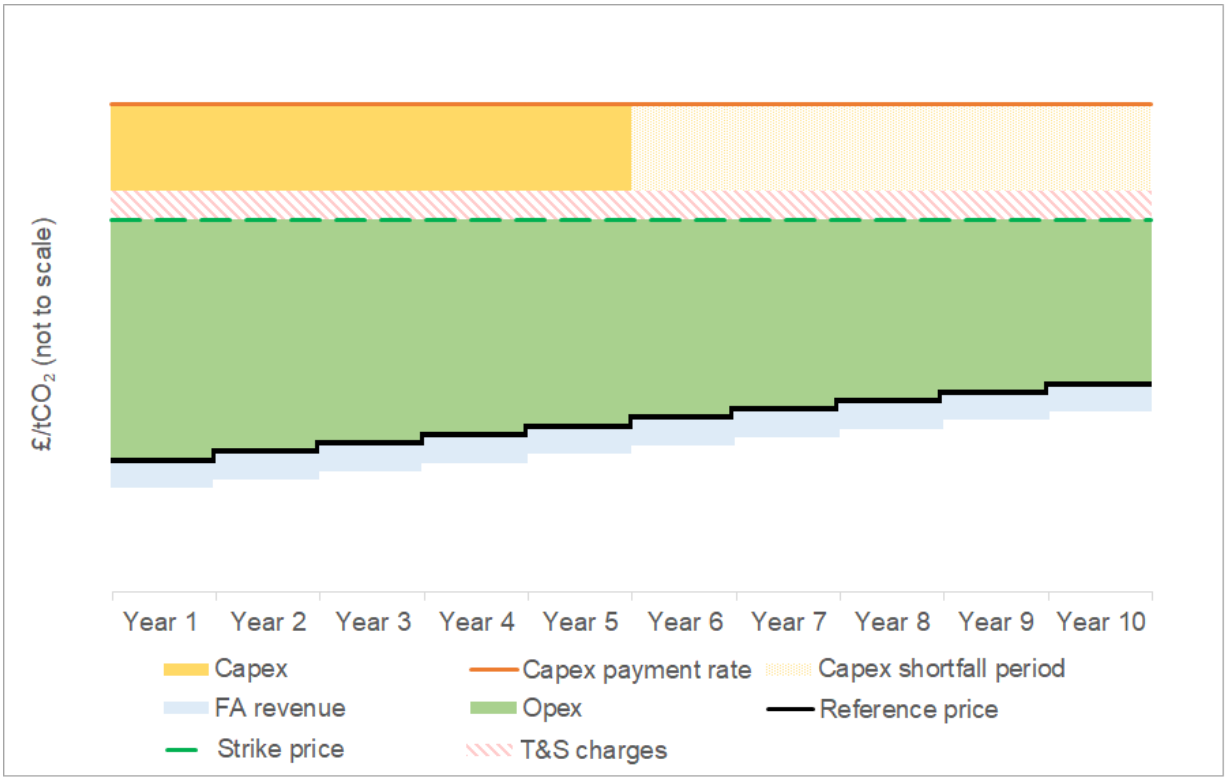
The capex payment rate and strike price for Track-1 / Phase-2 projects will be negotiated bilaterally and should be based on, and reflective of, expected costs of carbon capture for the project, including a rate of return. These costs will not include development (i.e. pre-FEED and FEED) costs.

Capex payment rate

The capex payment rate will apply from the start of operations to the point at which capex has been repaid (subject to an annual capex payment limit) or the end of year 10, whichever occurs sooner. The capex payment is a fixed £ amount per tonne of CO_2 captured and stored.

If the capex payment (which also includes a fixed quantum reflecting an agreed rate of return on capital investment over 5 years) has not been paid fully in the first 5 years due to lower than expected CO_2 capture quantities, the capex payment rate will continue to apply for up to a further 5 years or until enough CO_2 has been captured for capex and the fixed quantum of return to be fully paid, whichever occurs sooner.

Figure 1: Illustrative graph showing the ICC Contract payment components for first 10 years of Contract[9]



[8] CCUS Grant Funding Agreement for Industrial Carbon Capture Indicative Head of Terms: https://www.gov.uk/government/publications/design-of-the-carbon-capture-and-storage-ccs-infrastructure-fund

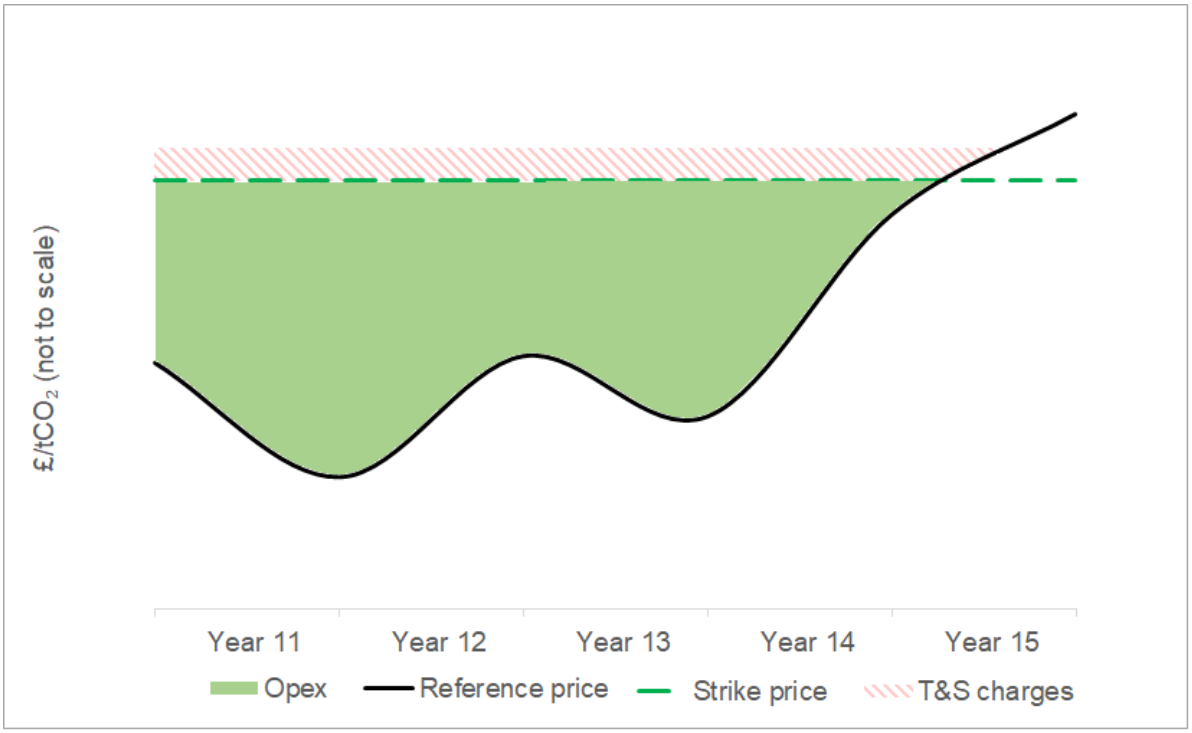
[9] Please note that this graph does not show that the opex will be indexed to CPI.

4. Opex

Strike price

The strike price, which is used to calculate opex payments, will apply for the duration of the Contract. The opex payment is a difference payment (per tonne of CO_2 captured and stored) made between the strike price and the reference price (see Section 6). We have updated our position on indexation of the opex costs in the strike price which is laid out in the next section.

Figure 2: Illustrative graph showing the ICC Contract payment components for the extension period *(subject to meeting certain conditions, set out in Section 11). Payments would be due from the Emitter to the ICC Contract Counterparty in the last year of the ICC Contract where the Reference Price exceeds the Strike Price*[10]



Energy price management and indexation to CPI

Our previously published position was that energy prices would be included within the overall negotiations on opex, and that all of the opex costs would be adjusted with inflation in line with the Consumer Price Index (CPI). The government position remains that energy price indexation is not appropriate for the ICC Contract. This is because we still consider that Emitters are best placed to manage energy price risk as part of their energy cost management strategy for their portfolio.

[10] Please note that this graph does not show that the opex will be indexed to CPI.

Given the recent unprecedented level of energy prices and the impacts that this could have on project costs, we will continue to monitor energy price risk and whether the current indexation proposals represent VfM.

Opex Reopener

An opex reopener will occur shortly after operations for Track-1 / Phase-2 projects, to allow a degree of protection for both emitters and government if the operations of these FOAK plants are materially different than was expected when contracts were entered into.

We are amending the opex reopener process slightly compared to the position set out in April to account for feedback received through the consultation. Rather than the reopener occurring one year after the start of operations, it will occur once a specified minimum amount of CO_2 has been captured in 12 Valid Billing Periods. The minimum amount of CO_2 that is required to be captured will be based on the "Metered CO_2 Output Estimate" from the Front-End Agreement converted into a monthly format. Provided the Emitter captures 85% of the monthly equivalent of the "Metered CO_2 Output Estimate" in a Billing Period, then that Billing Period will be valid and once there are 12 Valid Billing Periods, the Opex Reopener Adjustment will take place. The rationale behind this change in approach is to take into account potential outages and to ensure that there is sufficient operational data such that the amendment to the strike price is reflective of actual operations.

There will be a backstop to the opex reopener so that it will occur no later than 24 months after the start of operations. If by the 24th month the Emitter has not achieved 12 months of Valid Billing Periods, then the reopener process will be conducted based upon the Valid Billing Periods that are available.

The elements included within the opex reopener will be agreed during negotiations and the Emitter will need to evidence any changes in volume during operations, if this evidence is not submitted within the required time period, this may lead to suspension of payments. This evidence is used to determine what changes, if any, are to be made to the strike price, subject to a materiality threshold and, in respect of upwards adjustments only, a cap.

The cap and materiality threshold will apply on an item-by-item basis rather than collectively. The Opex Costs Early Reopener Cap is anticipated to be set at 15% and the Opex Costs Early Reopener Materiality Threshold is anticipated to be set at 5%. However, BEIS retains flexibility to amend these figures on a project-by-project basis during negotiations, when BEIS has a better understanding of the potential impacts on affordability which will be driven by the specific opex assumptions and total forecast capex/ opex of each project.

Figure 3 is an example of how the materiality threshold and cap could work in practice.

Figure 3: Example of actual costs being amended during the opex reopener

Unit written into contract	Amount
Materiality threshold	5%
Cap	15%
Fuel per unit of CO2 captured (t/t)	0.4
Fuel price (£/t)	150

Actual fuel weight (Mt)	0.33	0.34	0.35	0.36	0.37	0.38	0.39	0.4	0.41	0.42	0.43	0.44	0.45	0.46	0.47	0.48
Cost at agreed fuel price (£m)	49.5	51	52.5	54	55.5	57	58.5	60	61.5	63	64.5	66	67.5	69	70.5	72
Adjustments to strike price (£/t)	-7.5	-6	-4.5	-3	-1.5	0	0	0	0	0	1.5	3	4.5	6	6	6
						Materiality Threshold								Cap		

Settlement and Billing

A Settlement Unit of one day (from 00:00 to 23:59 of the same day) is the minimum period used to calculate payments that are to be made to or from the Emitter under the ICC Contract. A Billing Period, which is the frequency with which payments to/from the Emitter are made, will include the amount which is calculated for every Settlement Unit in a calendar month.

Capacity Limits

During any Opex Payment Year, opex payments related to the Metered CO_2 Output to T&S will be capped when the total Metered CO_2 Output to T&S reaches or exceeds 110% equivalent of the Maximum Annual CO_2 Capture Quantity. This figure will be the greatest mass quantity of CO_2 that the Emitter is expected to capture in any of Opex Payment Years 1 to 15, based on the design capacity and projected availability of the Capture Plant. The Maximum Annual CO_2 Capture Quantity will be set on a project-by-project basis and will be agreed during negotiations.

5. T&S Charges

T&S charges will be funded via the ICC business model for the duration of the ICC Contract[11]. They will be treated as a pass-through, as in the ICC Contract will pay the Emitter, who will then subsequently pay the T&SCo, and will be kept separate from the strike price.

We are still considering, in parallel with the development of the CCS Network Code, the extent to which T&S Charges will be passed through under the ICC Contract where the Emitter is unable to deliver CO_2 (whether fully or partially) to the T&S Network as a result of something that the Emitter has done or failed to do (and such charges remain payable). Payment of T&S charges pursuant to the ICC Contract will be capped annually by reference to maximum values

[11] Please note, the position on T&S charges is subject to ongoing development of the Network Code

of capacity, output to T&S, and size of delivery points which will be agreed on a project-by-project basis as part of negotiations[12].

The payment of T&S charges to the Emitter during the first 10 years of the ICC Contract will not be affected by the relative values of the strike price and the reference price (see Section 9 on Asymmetric Payments for further details).

Please see the Transport and Storage January 2022 business model update, the CCS Network Code indicative Heads of Terms published in June 2022 and the CCS Network Code Updated Indicative Heads of Terms published in December 2022 for further information on T&S charges arrangements[13].

6. Reference Price

For Waste ICC projects, please refer to Section 19

There is one Fixed Trajectory Reference Price for all ICC projects which is set out below and in Annex 2 of the Front-End Agreement.

This Fixed Trajectory Reference Price will apply for the first 10 years of the Contract Payment Term for initial ICC projects. In the extension period, the ICC Contract will use a market carbon price for all ICC projects (irrespective of any biogenic CO_2 captured) e.g. a monthly-averaged market carbon price for each calendar month in the extension period.

While it has always been our intention for the Fixed Trajectory Reference Price trajectory to be analogous to the carbon price, so that the price Emitters face is in some way representative of carbon costs, we do not have future UK ETS pricing (UK Emissions Trading Scheme) available to incorporate into the ICC reference price trajectory given the recent consultation on the UK ETS scheme and the inherent unpredictability of a future market price.

Consequently, we have chosen a fixed trajectory reference price to provide predictability for the Exchequer and investors of initial projects ahead of negotiations starting with initial ICC projects, given the link between reference price and strike price. We have decided that the Fixed Trajectory Reference Price will be based on the historical growth in carbon prices (as we set out as our intention in the April 2022 business model summary and consultation document), removing more recent periods where the ETS experienced high volatility such as during the Covid pandemic, where such high volatility may be unlikely to reflect long-term trends.

The starting value of the Fixed Trajectory Reference Price and the annual upward trajectory during the first ten years of each Emitter's contract are set out below:

- The starting value of the reference price will be £83 in 2022, based on the market carbon price under the UK ETS over a 3-month period prior to publication of the Contract at the end of 2022 (July to September 2022);

[12] These caps will be subject to change as T&S charges policy develops.
[13] Transport and storage business model: January 2022 update https://www.gov.uk/government/publications/carbon-capture-usage-and-storage-ccus-business-models

- The Fixed Trajectory Reference Price will follow an equally-stepped upward trajectory based on historical growth in carbon prices in the EU ETS for an increase of £2.50/year[14].

Table 1: Fixed Trajectory Reference Price by year

The table below sets out the Fixed Trajectory Reference Price values for each year from 2022 to 2040 based on the £2.50/year upward trajectory.

Calendar Year	Price (£/tCO_2)
2022	83.00
2023	85.50
2024	88.00
2025	90.50
2026	93.00
2027	95.50
2028	98.00
2029	100.50
2030	103.00
2031	105.50
2032	108.00
2033	110.50
2034	113.00
2035	115.50
2036	118.00
2037	120.50
2038	123.00
2039	125.50
2040	128.00

7. Free Allowance Treatment

For Waste ICC projects, please refer to Section 19

For Track-1 / Phase-2 ICC Contracts only, we have proposed the following Free Allowance (FA) treatment. The industrial Emitter will forfeit a number of FAs (received annually under the UK ETS) in proportion to the Expected Annual Capture Factor (EACF) for the initial 10-year contractual payment term.

[14] The Fixed Reference Price trajectory should not be considered to reflect future UK ETS scheme design which is currently being consulted on. This is not government's future view of the carbon markets and should not be used as such. The fixed trajectory reference price is to be used purely for the purpose of the ICC Contract.

Table 2: FA equation symbols

Symbol	Term	Description
dy_f	Number of Settlement Units in the relevant calendar year *f*	Number of days in calendar year *f*
$D_{FA,f}$	Protected FAs in the relevant calendar year *f*	Theoretical FAs x FA Trajectory x Expected Annual Capture Factor $$D_{FA,f} = H_{FA,f} Y_{FA,y} x_{e,f}$$
$H_{FA,f}$	Theoretical FAs in the relevant calendar year *f*	These are intended to broadly represent the volume of FAs the UK ETS permit holder would have been allocated in respect of the "installation" if the UK ETS laws which are in force and the policies to which the government is committed relating to FAs at date to be defined[15] are applied
$R_{B,i}$	Reference Price that applies during the relevant Settlement Unit *i*	Annual Compensation FAs and Forfeited FAs are priced at this price.
$T_{FA,f}$	Total Annual FA allocation for the relevant calendar year *f*	These are intended to cover the total number of FAs allocated to the UK ETS permit holder in respect of the "installation"[16].
$AACF_f$	Actual Annual Capture Factor in the relevant calendar year *f*	$$AACF_f = \frac{annual\ C_{T\&S} - C_{plant}}{Total\ Generated\ Emissions}$$
$x_{e,f}$	Expected Annual Capture Factor in the relevant calendar year *f*	This is the expected figure for the Actual Annual Capture Factor which is used to determine Forfeited FAs, Protected FAs and payments for these for calendar year *f*. Forfeited FAs and these payments are subsequently reconciled using the Actual Annual Capture Factor after the end of calendar year *f* (further details on reconciliation are set out below).
$Y_{FA,y}$	FA Trajectory in Opex Payment Year *y*	Trajectory is 100% in Opex Payment Year 1 and reduces linearly each year to 50% in Opex Payment Year 10. • 50% reduction applied over 9 years (i.e. for Opex Payment Year 1 there is no reduction) • 50 / 9 = 5.56% annual reduction
$F_{FA,f}$	Forfeited FAs in the relevant calendar year *f*	The number of FAs forfeited in a calendar year. $$F_{FA,f} = T_{FA,f} x_{e,f}$$
$N_{FA,f}$	Annual Compensation FAs in the relevant calendar year *f*	The number of FAs that an Emitter receives compensation for (on top of compensation for Forfeited FAs) if the number of Forfeited FAs falls below the number of Protected FAs: $$N_{FA,f} = D_{FA,f} - F_{FA,f}$$ $$N_{FA,f} = H_{FA,f} Y_{FA,y} x_{e,f} - T_{FA,f} x_{e,f}$$ with the condition that if: $$F_{FA,f} > D_{FA,f}\ , then\ N_{FA,f} = 0$$

[15] This date is set during negotiations before an Emitter's best and final offer is submitted.
[16] This means the "installation" as defined in the Free Allocation Regulation (by reference to The Greenhouse Gas Emissions Trading Scheme Order 2020).

$P_{FAC,i}$	Payment for Annual Compensation FAs in Settlement Unit *i*	Payment in addition to that which is paid for Forfeited FAs up to the level of Protected FAs.
$C_A, vent$	CO_2 vented from process A	CO_2 emissions produced as a result of process A that are never directed to the Capture Plant. They are always vented (and therefore the Emitter is required to comply with the UK ETS and surrender FAs in respect of those CO_2 emissions).
C_A	CO_2 from process A that is directed to the Capture Plant	CO_2 emissions produced as a result of process A and directed to the Capture Plant.
$C_{T\&S}$	Metered CO_2 Output to T&S	Captured CO_2 that enters the T&S Network.
C_{plant}	C_{plant}	CO_2 generated from providing heat and/or power to the Capture Plant (i.e. additional CO_2 that is produced by a process that is not eligible for FAs).
TGE	Total Generated Emissions	The total annual site-wide CO_2 emissions, consisting of all measured streams of CO_2 that are directed to the Capture Plant from the industrial installation ($e.g. C_A$ + C_B in Figure 4) and all measured streams of CO_2 that are vented directly to the atmosphere from the industrial installation (e.g. $C_A, vent, C_B, vent, C_C, vent$ in Figure 4).
C_{plant_ratio}	$C_{plant\ ratio}$	The ratio between (i) C_{plant} (i.e. the CO_2 emissions from a package boiler/CHP unit/plant that arise from powering and heating the Capture Plant) and (ii) Metered CO_2 Output to T&S (i.e. the CO_2 emissions from the process streams directed to the Capture Plant, that are captured and enter the T&S Network).
C_{bypass}	Bypass CO_2 Emissions	CO_2 emissions produced as a result of a process that are directed to, but bypass, the Capture Plant (e.g. $C_A, bypass,\ C_B, bypass$ in Figure 4).
$C_{plant,in}$	$C_{plant\ in}$	The portion of CO_2 emissions generated from providing heat and/or energy to the Capture Plant that is subsequently directed to, and does not bypass, the Capture Plant.
$C_{plant,out}$	$C_{plant\ out}$	The portion of CO_2 emissions generated from providing heat and/or energy to the Capture Plant that is subsequently not directed to the Capture Plant.
C_{res}	Residual CO_2	Residual "uncaptured" CO_2 emissions that are vented to atmosphere.

Capture Factor

This section summarises the concept of the Capture Factor and how it is used within the model. The Capture Factor is used in the forfeited FA formula and is important for understanding how the volume of FAs to be forfeited is calculated.

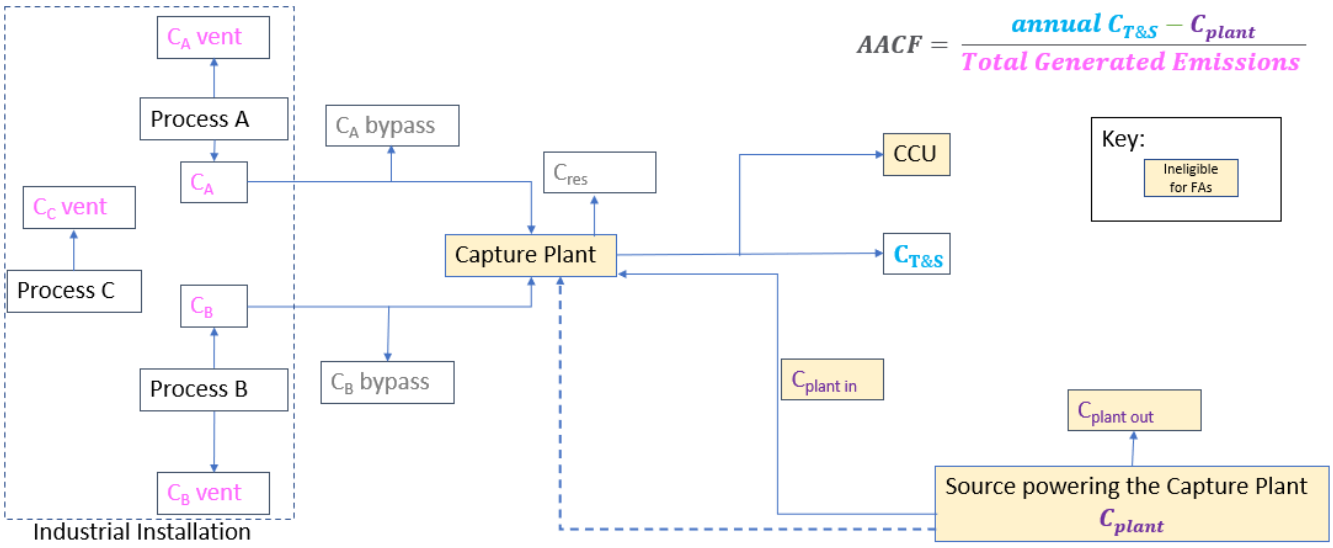
The ICC Contract defines two capture factors: the Actual Annual Capture Factor (AACF) and the Expected Annual Capture Factor (EACF). The AACF will only be known at the end of each calendar year and will be used to calculate the actual number of FAs that should have been forfeited in respect of that calendar year. Therefore, the EACF must be used at the beginning

of each calendar year for FAs to be forfeited upfront, and then a reconciliation will be conducted after each calendar year using the AACF.

The AACF represents the proportion of total annual site-wide CO_2 emissions that are captured and stored, subtracting the annual CO_2 emissions from providing heat and/or power to the Capture Plant (because these emissions need to be reported under the UK ETS, but a Capture Plant is not eligible to receive FAs). It calculates the net percentage reduction in CO_2 emissions as a result of installing the Capture Plant.

The total annual site-wide CO_2 emissions will consist of all measured streams of CO_2 emissions directed to the Capture Plant from the industrial installation (C_A + C_B) and the streams of CO_2 that are vented directly to the atmosphere from the industrial installation ($C_A, vent, C_B, vent, C_C, vent$). The Emitter will know their vented emissions from their UK ETS submission data.

Figure 4: Schematic showing how the Capture Factor is determined for a fictitious Capture Plant



Calculating the Capture Factor

The Capture Factor is a measure of the proportion of FAs the Emitter forfeits.

C_{plant} (shown as "Source powering the Capture Plant" in Figure 4) represents the auxiliary CO_2 generated within the site boundary (i.e. the amount of CO_2 produced from providing heat and/or power to the Capture Plant)[17]. C_{plant} is calculated on annual basis for the whole site using C_{plant_ratio} multiplied by the annual Metered CO_2 Output to T&S.

$$C_{plant} = C_{plant\_ratio} \times annual\ C_{T\&S}$$

[17] All references to Cplant in this document refer to Auxiliary CO2 Generated/Auxiliary CO2 Generated Input (as applicable) in the ICC Contract.

The C_{plant_ratio} represents the ratio between (i) C_{plant} (i.e. the CO_2 emissions from a package boiler/CHP unit/plant that arise from powering and/or providing heat to the Capture Plant) and (ii) Metered CO_2 Output to T&S (i.e. the CO_2 emissions from the process streams directed to the Capture Plant, that are captured and enter the T&S Network). The methodology and assumptions for setting this ratio will need to be carefully considered, particularly for plants that have shared CHP units.

During negotiations, the Emitter needs to propose:

a) Methodology for calculating the initial C_{plant_ratio} figure, the initial C_{plant_ratio} figure itself (based on the Capture Plant design data) and the initial EACF.
b) Methodology for calculating the re-based C_{plant_ratio} figure (i.e. with actual data). This will be a paper-based exercise and will be a different methodology to (a)

The Emitter's proposed methodology will need to demonstrate that the Emitter can meet specified requirements (which will be set out in the ICC Contract and provided to the Emitter prior to negotiations). The proposed methodology will be reviewed by BEIS and should take into consideration the design electricity and/or heat/steam consumption figures of the Capture Plant. BEIS will then review both (a) and (b) during negotiations and check whether it agrees with the methodologies and figures proposed. Once agreed, the methodology proposed per (b) will be set out in an annex to the Front-End Agreement. Separately, the initial C_{plant} ratio figure and the initial EACF will be set out in the Front-End Agreement.

We consider this to be the most efficient and streamlined approach. Taking this approach means that the Emitter will not be required to meter/measure all inputs (e.g. natural gas) and outputs (heat and/or power supplied to the Capture Plant and other processes) associated with the relevant package boiler/CHP unit/plant in order to identify the relevant CO_2 emissions.

The initial C_{plant_ratio} will apply until the one-off re-basing, at which point it may be adjusted. We expect the re-basing to occur on the earlier of the date on which there have been (i) 12 Valid Billing periods[18], or (ii) 24 Billing Periods (at the same time as the Opex reopener). During the rebasing, the Emitter will calculate the adjusted C_{plant_ratio} in accordance with the rebasing C_{plant_ratio} methodology (b) set out in the ICC Agreement and notify the ICC Contract Counterparty of the proposed adjusted C_{plant_ratio}. The proposed adjusted C_{plant_ratio} will reflect actual energy performance data (and therefore associated CO_2 emissions) from the Capture Plant during the Valid Billing periods and will need to be accompanied by a Director's Certificate, a report from the Emitter's technical advisor addressed to the ICC Contract Counterparty and a certificate from an independent Auditor addressed to the ICC Contract Counterparty. The methodology for (b) (i.e. the methodology to be used for the re-basing, which is the methodology that will be set out in the ICC Agreement) may only be amended if agreed by the ICC Contract Counterparty. Any amended methodology will need to be agreed before the date on which the re-basing occurs.

Provided that the ICC Contract Counterparty agrees with the Emitter's proposed adjusted C_{plant_ratio} figure, C_{plant_ratio} will (other than in the case of fraud or manifest error) be adjusted (up or down) accordingly, and the adjusted figure will be used to calculate the AACF in all subsequent Reconciliation Periods. If the Emitter fails to follow the procedure to adjust

[18] A Billing Period in which the Metered CO_2 Output is equal to or greater than eighty-five per cent (85%) of the Monthly Metered CO_2 Output Estimate.

C_{plant_ratio}, the ICC Contract Counterparty will have the option to suspend payments until the Emitter has provided the required information.

Setting of the EACF

The immediately preceding calendar year's AACF will be the EACF for the "current" calendar year, unless:

a) the Emitter notifies the ICC Contract Counterparty that it does not consider that the previous year's AACF should be the current year's EACF, or

b) the ICC Contract Counterparty notifies the Emitter that it does not consider that the previous year's AACF should be the current year's EACF.

If the Emitter notifies the ICC Contract Counterparty (per a) above), the Emitter must:

- give reasons (i.e. explain why the previous calendar year's AACF should not be the current year's EACF);
- provide a proposed alternative figure (either higher or lower) for the EACF, with supporting information; and
- provide an accompanying technical report and Directors' Certificate.

The ICC Contract Counterparty will then consider the notice and information submitted by the Emitter and confirm whether or not it agrees with the proposed alternative figure (or requires further information).

If the ICC Contract Counterparty notifies the Emitter (per b) above), it must also give reasons. In response, the Emitter must confirm whether it agrees or disagrees with the ICC Contract Counterparty, giving reasons. If the Emitter agrees with the ICC Contract Counterparty, it must:

- provide a proposed alternative figure (either higher or lower) for the EACF, with supporting information; and
- provide an accompanying technical report and Directors' Certificate.

The ICC Contract Counterparty will then consider the notice and information submitted by the Emitter and confirm whether or not it agrees with the proposed alternative figure (or requires further information).

If the Emitter and ICC Contract Counterparty cannot agree an alternative EACF, the dispute may be referred to the Dispute Resolution Procedure and, in the meantime, the immediately preceding year's AACF will be the EACF.

Forfeited FAs

Forfeiture of FAs will occur near to the start of each calendar year using an EACF. A comparison of Opex Payment Years and calendar years (or UK ETS Years) is shown in Figure 5. The EACF for the first year of operations will be agreed during negotiations. For each subsequent year, the EACF will be the previous year's AACF (unless agreed otherwise, as per the process above), noting any adjustment to the C_{plant_ratio} (detailed further above) that occurs at the same time as the opex reopener. Forfeited FAs and related payments are reconciled after the end of each calendar year (detailed further below).

The number of Forfeited FAs will be calculated as follows:

$$F_{FA,f} = x_{e,f} \times T_{FA,f}$$

Figure 5: Comparison of Opex Payment Years and UK ETS (calendar) Years[19]

Price Assurance

The Emitter will receive price assurance for these forfeited FAs; the Emitter will be compensated at the value of the reference price for the relevant Settlement Unit, i.e. on a £ per tonne of forfeited FA basis.

Volume Assurance

The Emitter will also receive volume assurance in relation to a minimum number of 'protected' FAs that are eligible for compensation. Such volume assurance will follow a trajectory which will be 100% for Opex Payment Year 1, decreasing linearly to 50% for Opex Payment Year 10, which then applies to an Emitter's Theoretical FAs multiplied by the Emitter's EACF, to give their number of Protected FAs for the relevant calendar year. Theoretical FAs are intended to broadly represent the volume of FAs the Emitter would have been allocated in respect of the installation if the UK ETS laws which are in force and the policies to which the government is committed relating to FAs at a date to be set during negotiations are applied.

The number of Protected FAs is a theoretical figure. This means that, if the Emitter's Protected FAs exceed the Emitter's Forfeited FAs for the relevant calendar year, the Emitter does not receive additional FAs for the Protected FAs under the UK ETS. Instead, it will receive compensation for Protected FAs via ICC Contract payments.

If an Emitter's Protected FAs are greater than their Forfeited FAs for the relevant calendar year, then the Emitter will receive a top up payment equal to the difference between the number of Protected FAs and the number of Forfeited FAs (Annual Compensation FAs) multiplied by the applicable fixed trajectory carbon reference price (Payment for Annual Compensation FAs). If an Emitter's Protected FAs are less than their Forfeited FAs for the relevant calendar year, then the Emitter will not receive a top up payment. Thus, the Annual Compensation FAs, and volume protection as a whole, is a backstop in the event that an Emitter's actual FA allocation falls below this 'protected' level. Additional detail on volume protection can be found in the April 2022 Update.

The 'starting level' for the number of Theoretical FAs will be set during negotiations (before the Emitter's best and final offer is submitted) based on the number of FAs allocated to the installation for scheme year 2025 in the published UK ETS allocation table at that date. The

[19] This example assumes that the Start Date occurred within the TCW.

‘starting level’ will be subject to change to reflect any proposed changes in law or changes in government policy that are made or announced prior to that date to reduce the number of FAs in the allocation table for 2025 (that will not yet be reflected in the allocation table); and adapted to reflect any Activity Level Change (ALC) adjustments that need to be applied between the Agreement Date and the Start Date (which will not be known during negotiations). Scheme year 2025 was chosen, as the allocation table for 2026 onwards will not be available during negotiations, so this will be the figure available for the year nearest to the first year of operations. The 'starting level' for the number of Theoretical FAs will be set out in the ICC Agreement and will remain subject to the ALC adjustment described above.

Activity level changes

Emitters may receive a change in FA allocation, or notice of a change in FA allocation, mid-year because of ALCs or other allocation changes as part of the UK ETS scheme. Where there is a specified increase or decrease in an installation's activity levels, there may be changes to the level of free allocation awarded to the installation.

The volume of Theoretical FAs under the ICC Contract will also be affected by ALCs. If an Emitter’s FAs are increased or decreased as a result of ALCs, their volume of Theoretical FAs will also be adjusted. This will have an impact on the Protected FAs calculation which is described above.

There will be a cap on the maximum volume protection offered in absolute terms. The cap will be calculated using the number of FAs allocated to the installation for 2025 in the allocation table at the date on which the starting level for the number of Theoretical FAs is set during negotiations (as described above), multiplied by the FA Trajectory and a Capture Factor (which is to be determined).

How the provisions relating to ALCs will be drafted and will then apply in practice under the ICC Contract is currently under review and will be finalised in due course.

Ceasing Protected FA Payments

If the Industrial Installation is offline in any Billing Period, there will be no Protected FAs payment.

FA Allocation and Forfeiture Deadline

FAs are allocated on or before 28 February each UK ETS scheme year. In the ICC Contract, this will be called the “FA Allocation Deadline”. The FA Allocation Deadline is currently legislated up to 2030, and after this is currently unknown (as the legislation has not yet been put in place).

The FA Forfeiture Deadline will be the deadline for the Emitter to transfer the required number of Forfeiture FAs to the ICC Contract Counterparty. This will occur at the same time every year and will be 3 Business Days after the FA Allocation Deadline. This will also be the deadline for the payment of the Reconciliation Payment.

The Emitter must give the ICC Contract Counterparty notice of the transfer of FAs to the ICC Contract Counterparty's trading account, including confirmation from the Emitter that it has not

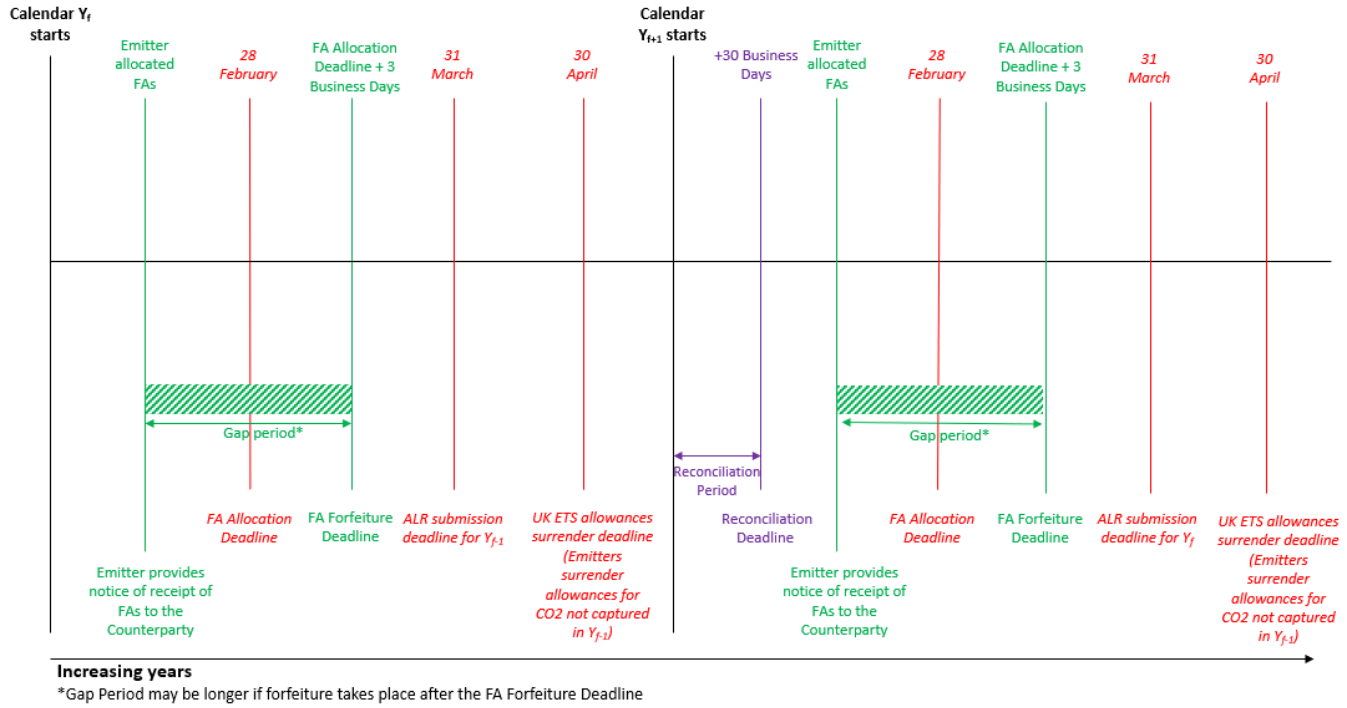
dealt in the Forfeited FAs prior to the FA Forfeiture Deadline (see Gap Period Restrictions Section below). Once the ICC Contract Counterparty has received the Forfeited FAs from the Emitter, it must give notice of receipt to the Emitter within 5 Business Days.

Reconciliation of FAs

At the end of each calendar year, there will be a 30 Business Day period (the Reconciliation Period) where the Emitter is required to submit specified information to the ICC Contract Counterparty and the ICC Contract Counterparty performs the necessary calculations relating to FAs. The Reconciliation Deadline will be 30 Business Days after 31 December in each calendar year.

During the Reconciliation Period, the Emitter must provide the ICC Contract Counterparty with the Emitter's AACF for the previous calendar year and the necessary data for this calculation (including Total Generated Emissions data) and, if applicable, its proposed EACF for the current calendar year (see "Setting of the EACF" Section above). The timing of this process is shown in Figure 6.

Figure 6: Timeline for the forfeiture and reconciliation of FAs, with red text/italics showing UK ETS timepoints and green and purple text showing ICC BM timepoints



*Gap Period may be longer if forfeiture takes place after the FA Forfeiture Deadline

The ICC Contract Counterparty will calculate either the number of Forfeiture FAs for the "current" calendar year (for Opex Payment Years 2-9) or a pro-rated number of Forfeiture FAs according to the Specified Expiry Date (for Opex Payment Year 10). Forfeiture FAs will become Forfeited FAs when they have been transferred from the Emitter's operator holding account to the ICC Contract Counterparty's trading account.

The Reconciliation FAs for the previous calendar year will be calculated by comparing the EACF to the AACF and multiplying the difference by the Total Annual FA Allocation. If the AACF is higher than the EACF, the Reconciliation FAs for the previous calendar year will be added to the Forfeiture FAs for the current calendar year to give the Net Forfeiture FAs and a payment will be due to the Emitter. If the AACF is lower than the EACF, a payment will be due to the ICC Contract Counterparty and, provided that such payment is made, the Reconciliation FAs for the previous calendar year will be deducted from the Forfeiture FAs for the current calendar year to give the Net Forfeiture FAs.

At the end of the Reconciliation Period, the ICC Contract Counterparty will notify the Emitter of:

- the number of Forfeiture FAs, Reconciliation FAs and Net Forfeiture FAs,
- the amount of the Reconciliation Payment, and
- the date on which the FA Forfeiture Deadline falls.

The forfeiture and volume protection of FAs for Track-1 / Phase-2 projects will apply for the first 10 years of each ICC Contract but not for the extension period.

Setting the Estimated Start Date

The Estimated Start Date will be determined by the ICC Contract Counterparty (at its sole discretion), having regard to the information provided by the Emitter via the monthly information undertaking (see Condition 25.1(A)(i) of the April publication version of the ICC Contract) and quarterly construction phase reporting obligation (see Condition 3.14 of the April publication version of the ICC Contract). The Estimated Start Date is used only for the purpose of calculating the number of FAs to be forfeited for Opex Payment Year 1.

The Estimated Start Date will be determined in January of the anticipated first year of operations. If a T&S Commissioning Delay Event occurs, the ICC Contract Counterparty may waive the obligation for the Emitter to forfeit FAs in Year 1 of operations (although BEIS is still considering how such waiver will be reflected in the ICC Contract).

Safety Factor

FAs must be forfeited by the Emitter by the same deadline in the first year of operations as in subsequent years. For Opex Payment Year 1, FA forfeiture will be pro-rated according to the Estimated Start Date in the relevant calendar year plus a ‘safety factor’ of an additional 90 days’ worth of FAs (in case the Start Date occurs earlier than anticipated – these will be returned to the Emitter if the Start Date occurs later than anticipated, see section below). The total number of FAs to be forfeited will be capped at the Total Annual FA Allocation, multiplied by the EACF, for that calendar year. This is subject to the condition that, if an Emitter’s Start Date occurs before the FA Forfeiture Deadline, the Emitter will only need to forfeit the accurately pro-rated number of FAs (i.e. it will not have to forfeit the additional FAs that comprise the ‘safety factor’).

If the Start Date occurs after the Estimated Start Date, the safety factor FAs and any additional excess FAs that have been forfeited will be returned to the Emitter at the end of year reconciliation.

- If the Start Date occurs after the Estimated Start Date, the full safety factor FAs and FAs forfeited for the days that were estimated to be, but were not actually, part of the operational period (as the operational period was shorter than it was estimated to be) will be returned to the Emitter.
- If the Start Date occurs on the Estimated Start Date, only the full safety factor FAs will be returned to the Emitter.
- If the Start Date occurs less than 90 days before the Estimated Start Date, only part of the safety factor FAs will be returned to the Emitter (but not the full safety factor, as the operational period was longer than it was estimated to be).
- If the Start Date occurs more than 90 days before Estimated Start Date, no safety factor FAs will be returned to the Emitter and the Emitter must forfeit additional FAs for days that were not estimated to be, but were actually, part of the operational period.

Remedies if the Emitter fails to transfer required number of FAs

Emitters are required to transfer FAs to the ICC Contract Counterparty at the start of the calendar year (in line with the EACF).

If the Emitter fails to forfeit the Forfeiture FAs (in the calendar year in which Opex Payment Year 1 commences) or the Net Forfeiture FAs (in the calendar years in which Opex Payment Years 2-10 commence) by the FA Forfeiture Deadline, the ICC Contract Counterparty has the right to suspend all payments which would otherwise be payable by the ICC Contract Counterparty to the Emitter during the period of breach under the ICC Contract.

The ICC Contract Counterparty can issue a notice to the Emitter stating that it intends to suspend all such payments and the date from which it proposes to do so. If the Emitter subsequently rectifies the breach, the ICC Contract Counterparty will pay any suspended amounts to the Emitter on a lump sum, staged or daily basis (and without interest).

Regardless of whether or not it issues a payment suspension notice, the ICC Contract Counterparty can also notify the Emitter that it has failed to transfer the Forfeiture FAs or Net Forfeiture FAs by the FA Forfeiture Deadline. If such failure is not remedied within 20 Business Days, this will be a Termination Event and the ICC Contract Counterparty will have the right to terminate the ICC Contract. The termination notice can be revoked by the ICC Contract Counterparty before the designated termination date.

Gap Period Restrictions

The Emitter must give the ICC Contract Counterparty 1 Business Days' notice when FAs have been allocated to its operator holding account in the UK ETS Registry, including a record of its operator holding account, to demonstrate receipt of the FAs. This notice must (i) include confirmation from the Emitter that it acknowledges the terms of the ICC Contract relating to the contractual 'lock up' of FAs and that it will not deal in the FAs that need to be forfeited prior to the FA Forfeiture Deadline, and (ii) be accompanied by a Director's Certificate.

The Emitter will be unable to 'deal' in FAs during the gap between the date of actual allocation of FAs and the later of (a) the FA Forfeiture Deadline and (b) the date of actual transfer of the correct volume of FAs to the ICC Contract Counterparty (the "Gap Period"). 'Dealing' could

include trading, selling, leasing, transferring or creating security over, the FAs. The restriction only applies to the FAs that need to be forfeited.

If the Emitter fails to give this notice, there will be no specific contractual remedies. This is because the focus is on the forfeiture of FAs, which must take place shortly after FA allocation (as described above). However, in these circumstances the Emitter will be in breach of the ICC Contract which could give the ICC Contract Counterparty certain common law remedies and equitable remedies against the Emitter. Further, if the Emitter gives this notice but provides information in it that is false, there could be a “breach of key obligations” on the basis of fraud, which is a Termination Event. The Gap Period is anticipated to be short, so these restrictions are considered proportionate.

The Emitter must also give a contractual undertaking that no security may be created over any FAs (including both Forfeiture FAs/Net Forfeiture FAs and FAs associated with Residual CO_2) or the Emitter's operator holding account, during the Gap Period.

Emitter Registry Account Requirements

There will be a contractual obligation on the Emitter to ensure it has set up and maintains a minimum of four (4) authorised representatives for its operator holding account and to disclose the details of these authorised representatives to the ICC Contract Counterparty.

FAs Provision Breaches leading to a Termination

If the Emitter fails to comply with any part of the forfeiture and reconciliation process, and such failure results in a default termination, there will be a contractual obligation for the ICC Contract Counterparty to return excess FAs to the Emitter provided that:

- the Emitter has returned any over-payment for those excess FAs to the ICC Contract Counterparty, and
- the Emitter has paid the Default Termination Payment to the ICC Contract Counterparty.

The deadline for the Emitter to pay the Default Termination Payment will be 30 Business Days after notification of the amount of the Default Termination Payment. The deadline for returning the over-payment is under consideration.

If the Emitter has failed to pay the Default Termination Payment or return the over-payment by the relevant deadline, the ICC Contract Counterparty will retain the excess FAs.

New Entrants

We are considering how the current mechanisms for FA forfeiture and reconciliation may need to be adapted for Projects considered as new entrants in the UK ETS scheme.

8. Negative emissions

Biogenic CO_2 that is captured and permanently stored could be described as 'CO_2 removals' or 'negative emissions', which the Net Zero Strategy stated as being essential to compensate for residual emissions arising from sectors that are the most difficult to decarbonise.

There is potential for these negative emissions to be monetised, help stimulate negative emissions markets and reduce government support costs. However, there is still ongoing work across government to consider the implications of Article 6 of the Paris Agreement with respect to credit sales and international accounting following COP26, which is being considered in the context of wider development of incentive frameworks for GGRs and negative emissions. Government is also exploring the role of the UK ETS as a potential long-term market for GGRs and has published a call for evidence with the Devolved Administrations as part of the consultation[20] published in March 2022 on the UK ETS.

Given the ongoing development of the wider policy landscape on negative emissions in the UK and the need to ensure a coherent approach to how any negative emissions sales would be claimed/accounted for, the sale of any 'negative emissions' associated with the biogenic CO_2 captured will initially be prohibited under the ICC and Waste ICC Contracts. This provision will be reviewed by the ICC Contract Counterparty to assess whether the sale of credits will be permitted within the Contract. If, as a result of the review, the sale of credits is permitted an appropriate deduction will be made from the subsidy calculation to reduce the risk of over-subsidy.

For the purposes of the ICC and Waste ICC Contracts, it is considered that credits can be categorised into two main types:

1. Voluntary non-compliance carbon markets;
2. Compliance markets.

Voluntary non-compliance carbon markets are those markets where credits cannot be utilised for compliance. Compliance markets are credits that can be used for compliance purposes as part of a carbon market obligation.

Restrict and review

Initially, there will be a restriction on the generation or accreditation for negative emissions and any potential sales or use. The ICC Contract Counterparty will have sole decision rights to review the restriction on sale of negative emissions. There will be two review processes, one for voluntary non-compliance markets and one for compliance markets, which means that these can be triggered at different times. Additional conditions for participation may be provided as a result of the review process. The review process will also identify the "fallback price" which will be used for: (i) credits that are generated but are not sold prior to the end of the Term; (ii) surrendered for compliance purposes under the UK ETS; and (iii) sold to a linked entity (in each case, as set out in greater detail below). Additionally, for the Waste ICC Contract only, in the assessment of the extension period market condition.

[20] UK Emissions Trading Scheme (UK ETS) Consultation: https://www.gov.uk/government/consultations/developing-the-uk-emissions-trading-scheme-uk-ets

If the review process lifts the restrictions surrounding negative emissions, it will be an Emitter's choice as to whether or not to participate in the negative emissions markets. If the restrictions are lifted, a letter from the Emitter to the ICC Contract Counterparty is required stating the Emitter's intention to participate in the negative emission markets. It is important to note that no automatic deductions to ICC payments will be made for negative emissions at the point where negative emission participation is permitted or at the point where the Emitter provides a letter of intent.

If an Emitter is found to be in breach of the restrictions relating to negative emissions, this will result in termination rights for the ICC Contract Counterparty.

Voluntary non-compliance carbon markets

As part of the review, the ICC Contract Counterparty will highlight which markets and accreditations will be permitted. Providing a list of acceptable markets and accreditations will help to ensure that the sale of negative emission credits occurs into credible negative emissions markets.

A 90% deduction of the gross revenues generated from the sale of voluntary non-compliance carbon market credits will be made from the subsidy payment each month. The gross revenues will be self-reported on an open book basis. The 10% of the gross revenues retained by the Emitter are expected to cover the costs of participation and related reporting/admin costs within the voluntary non-compliance carbon markets and provide an incentive to participate.

The Emitter will be prohibited from transferring or selling voluntary non-compliance negative emission credits to a linked entity. This approach is required to minimise value leakage that could occur considering the complexity of setting a robust value that could be used in payment calculations. The complexity of setting a robust value arises from the expectation of numerous voluntary negative emission markets.

Compliance markets

For compliance market credits, in alignment with the voluntary non-compliance carbon markets position, a 90% deduction of the gross revenues generated from the sale of negative emission credits will be made. The gross revenues will be self-reported on an open book basis.

In compliance markets, it may be possible for the Emitter or a linked entity to benefit from the value that a compliance credit may be able to provide without generating sales revenues equal to the credit's value. The value to the Emitter would come from avoiding the costs associated with compliance within the market, achieved by either using a credit that has been created for compliance on residual emissions, or through a linked entity attaining the compliance credit at below market rate. In such a scenario, without revenues equal to the credits value being generated, the Emitter benefits from the value of the credits without the subsidy being otherwise adjusted to account for that value.

Therefore, for credits that are used for compliance purposes, a 90% deduction will be made on the negative emissions value which is termed the "fallback price", which represents the market value for each of the negative emission credits. The "fallback price" will be determined by a principles-based approach to ensure that the value of the negative emission credits is

accurately represented. For credits that are sold or transferred to linked entities a 90% deduction will be made at the higher of the “fallback price” or the achieved sales price.

It should be noted that the “fallback price” is only required on those negative emission credits that are issued and not sold in open markets to a third party. This approach provides the Emitter with two decisions before the “fallback price” would be required: 1) to opt-in, become accredited and generate credits, then 2) to not sell the credits to a third party or use them for compliance purposes. This approach is believed to provide greater flexibility to the Emitter and should reduce any perceived risk around the “fallback price”.

Reporting and payment mechanics

During the restriction on the sale of negative emissions, an independent Auditor’s report and a Director’s Certificate will be provided to the ICC Contract Counterparty on an annual basis. This will help to ensure that there are no negative emissions credits being generated or sold by the Emitter. BEIS is still working through the specific detail of this regime, the intent is not to require an Auditor’s report in respect of those ICC Emitters with limited prospect of generating negative emissions.

If the restrictions are lifted, sales revenues may be achieved across compliance and voluntary non-compliance schemes and the combined sales revenues, surrendered compliance credits, linked entity credit transfers/sales and unutilised credits will be self-reported by the Emitter to the ICC Contract Counterparty on a monthly basis. On an annual basis, an independent auditor’s report will be submitted to the ICC Contract Counterparty to confirm self-reported data. If an Emitter fails to comply with their reporting obligations then the ICC Contract Counterparty will have suspension rights until such reporting obligations are satisfied.

Any discrepancies between the monthly reported figures and the audited figures will be reconciled. Provision of misleading or reckless information in self-reported data will lead to a termination right.

Negative emission deduction calculation

The negative emissions deduction will be calculated as 90% of the sum of the value associated with the different use cases:

1. The gross third-party sales revenues into a voluntary non-compliance market,
2. The gross third-party sales revenues into a compliance market,
3. The “fallback price” applied to all those credits that are utilised for compliance,
4. The value associated with each compliance credit transferred/sold to a linked entity calculated by taking the higher of the “fallback price” or achieved sales price.

If a credit is generated and not 1) sold, 2) used for compliance, or 3) transferred to a linked entity, then no negative emission deduction will occur for that credit until such point it is used in any of the three above use cases (until the end of the contract term – see below).

Unutilised credits

If an Emitter has unutilised negative emission credits upon the expiry or termination of the ICC Contract (i.e. credits that were not sold, transferred to a linked entity or surrendered for

compliance purposes), then a deduction of 90% of the “fallback price” will be made on all unutilised credits (i.e. whether voluntary non-compliance or compliance credits).

The accumulation of unutilised credits by the Emitter creates a credit risk for the ICC Contract Counterparty. To help manage this credit risk, collateral will be required. The collateral will be required in the form of Cash, Bond or Letter of Credit from a qualifying provider.

Collateral will be required once the value of accumulated and unutilised credits is greater than a lower threshold limit to be set at £5 million in years 1-8 and £1 million in years 9 onwards. Once the value of the credits has exceeded the lower threshold limit, an Emitter would be obligated to provide collateral for the value of the credits above the lower threshold limit. For example, if the value of credits in year 5 totalled £7 million, then the collateral required would be £2 million (equal to £7 million minus £5 million).

The value of the collateral will be assessed on a semi-annual basis to ensure that the value of collateral and the risk borne by the ICC Contract Counterparty associated with the value of accumulated credits does not deviate too much. Assessment of collateral value will be made through a combination of self-reported and audited data. If there is a change in the value of credits between the semi-annual collateral assessments of greater than 130% of the original assessment value, then the ICC Contract Counterparty will have the right (but not the obligation) to request the value of the collateral to be updated. An update on collateral can be requested by the ICC Counterparty if the value of credits increases by greater than £5 million, regardless of if the 130% threshold has been exceeded. The ICC Counterparty will not have a right to request an increase to the collateral value if the 130% threshold has been exceeded but the increase in credit value is less than £2 million.

To limit the overall exposure for the ICC Contract Counterparty, there will be an upper limit on the value of unutilised credits that can be accrued by the Emitter of £50 million. If the value of accumulated credits increases is greater than £50 million this can lead to a suspension right. Any suspended payments will be paid to the emitter should the value of accumulated credits be rectified (via utilisation of credits, e.g sale, transfer or surrender). If an Emitter fails to reduce the value of accumulated credits within 1 month, this will lead to a termination right.

9. Asymmetric Payments

For Waste ICC projects, please refer to Section 19

For the first 10 years of Track-1 / Phase-2 ICC Contracts, opex payments will be asymmetric:

- If the strike price is higher than the base reference price, the ICC Contract Counterparty pays the Emitter the difference;
- If the strike price is lower than the base reference price, no payments in relation to the strike price are made between the ICC Contract Counterparty and the Emitter.

Capex payments, free allowance forfeiture and compensation, and T&S charges continue to be paid from the ICC Contract Counterparty to the Emitter as normal.

Symmetric payments will come into force during the extension period (see Section 10 on Contract Extension).

10. Carbon Intensity Reporting

Emitters will be required to report their carbon intensity annually to the ICC Contract Counterparty. The purpose of such reporting would be to provide assurance that the Emitter has not created excess CO_2 for the purpose of receiving additional subsidies pursuant to the ICC Contract.

Building on the detailed update we gave on Carbon Intensity Reporting in April 2022, further information on the Carbon Intensity Reporting is available below and in the accompanying Conditions.

Six months prior to the Start Date of the project, Emitters will be required to submit a draft methodology, setting out the Emitter's proposed Carbon Intensity Reporting methodology for calculating and reporting the carbon intensity value for each industrial activity. This will allow the ICC Contract Counterparty to verify the Emitter's methodology for reporting their carbon intensity, and to understand what to expect in future carbon intensity reports. This also applies to 'new build' sites, but Emitters will have to submit a report using estimated data.

Carbon intensity baseline

The carbon intensity baseline is the level against which carbon intensity reports will be assessed. There will be an individual baseline for each of the industrial activities at the industrial facility that will feed CO_2 into the Capture Plant. The rationale for this is that the carbon intensities of different processes can greatly vary for the same site.

The Agreed Carbon Intensity Baseline in respect of each industrial activity will be set as the average carbon intensity for the last two years prior to the operation of the Capture Plant, excluding any periods where there have been major shutdowns/ maintenance that would have a notable effect on the carbon intensity. If a site has been operational for less than two years but more than 1 year, the ICC Contract Counterparty will use the available data to set the baseline in respect of each industrial activity.

Emitters will submit a carbon intensity baseline report in the first month of operations of the Capture Plant. This report will include all applicable data to allow the ICC Contract Counterparty to review their proposed carbon intensity baseline in respect of each industrial activity.

Carbon intensity baseline for new build sites

Any site that has been operational for less than one year will be classed as 'new build' for the purpose of reporting on their carbon intensity and as such will start the ICC Contract without a carbon intensity baseline. Instead, their carbon intensity baseline in respect of each industrial activity will be set after they have been operational for one calendar year, e.g. if a site becomes operational in October 2027, the Agreed Carbon Intensity Baseline would be set in March 2029 (that being the end of the reporting year after the plant has been operational for one calendar year in October 2028), once there is a minimum of one whole calendar years' worth of data.

Data submissions

The Emitter will submit their first Carbon Intensity Report the following year after the Agreed Carbon Intensity Baseline has been set, e.g. if the Emitter's Agreed Carbon Intensity Baseline was set in March 2029, they would submit their first report in March 2030.

If data submitted for any month is outside of the Acceptable Carbon Intensity Threshold, which will be set at 10% above the baseline, this will trigger further scrutiny of the data by the ICC Contract Counterparty. At this level of variance, we would expect the Emitter to have provided an explanation and narrative around the variance.

Data submitted for the carbon intensity baseline in respect of each industrial activity, the draft methodology and any subsequent carbon intensity report will need to be independently audited to ensure the data is complete and correct. This process should be conducted by a suitably skilled and qualified technical auditing expert with specific knowledge of the industry sector.

The consequences of non-compliance are set out Section 15 of this document and in further detail within the April 2022 business model update.

Carbon Intensity Reporting and Energy from Waste

In light of feedback received to the April consultation, we have reconsidered our position that Energy from Waste (EfW) plants should have to fulfil the Carbon Intensity Reporting requirement. Our position is that EfW plants will not be required to fulfil the Carbon Intensity Reporting requirement. This is because EfW plants have little ability to create excess carbon as they are not creating a product, but instead processing waste with their feedstock determined by their customers. Additionally, the variability of their feedstock means that a carbon intensity baseline is unlikely to be reflective of future operations, especially if the customer(s) change(s) part way through their Waste ICC Contract or if there are waste regulation reforms. Therefore, the Carbon Intensity Reporting requirement will not apply for EfW projects, although we will continue to evaluate this position for future rounds of allocation.

11. Contract Extension

For Waste ICC projects, please refer to Section 19.

Extension Conditions

The Contract will be comprised of an initial 10-year contractual payment term with the option for a one-year extension, up to a total of five additional years.

The Emitter will need to demonstrate that it remains connected to a T&S Network when it makes its request for an extension to the term.[21]

[21] Provided that the Capture Plant remains connected to a T&S Network (i.e. an Emitter's T&S Connection Agreement has not expired or been terminated by the relevant T&S Operator for any reason), then that will be sufficient to satisfy the T&S Extension Condition.

The Emitter would have to achieve certain performance conditions during prior years of the ICC Contract to trigger the extension. These are:

- Average CO_2 Capture Rate over the last five available Contract Payment Term Years (e.g. years 5 to 9 inclusive for an extension into year 11) is greater than or equal to the higher of i) 85% or ii) 5 percentage points less than the CO_2 capture rate achieved during OCPs; and
- Total mass quantity of CO_2 captured and stored over the immediately preceding five full Contract Payment Term Years (e.g. years 5 to 9 inclusive for an extension into year 11) is at least 90% of the Metered CO_2 Output to T&S Estimate. Thismass quantity may be actual or, for example in circumstances of Force Majeure, cross-chain events or Change in Law, an appropriate “deemed” capture mass quantity.

In addition to the performance conditions described above, the following market condition would need to be satisfied to trigger the extension: the Average Annual Carbon Market Reference Price (e.g. UK ETS carbon price) should be less than or equal to the subsidy rate (which is the sum of the strike price and T&S charges, converted to a £ per tonne of CO_2 basis) over a one-year period.

This one-year period will be two Contract Payment Term Years before the extension year in question, subject to the Emitter requesting an extension, e.g. the defined period of time is Contract Payment Term Year 9 for an extension to Contract Payment Term Year 11. The Average Annual Carbon Market Reference Price used to test this condition will be the average over the 12-month period.

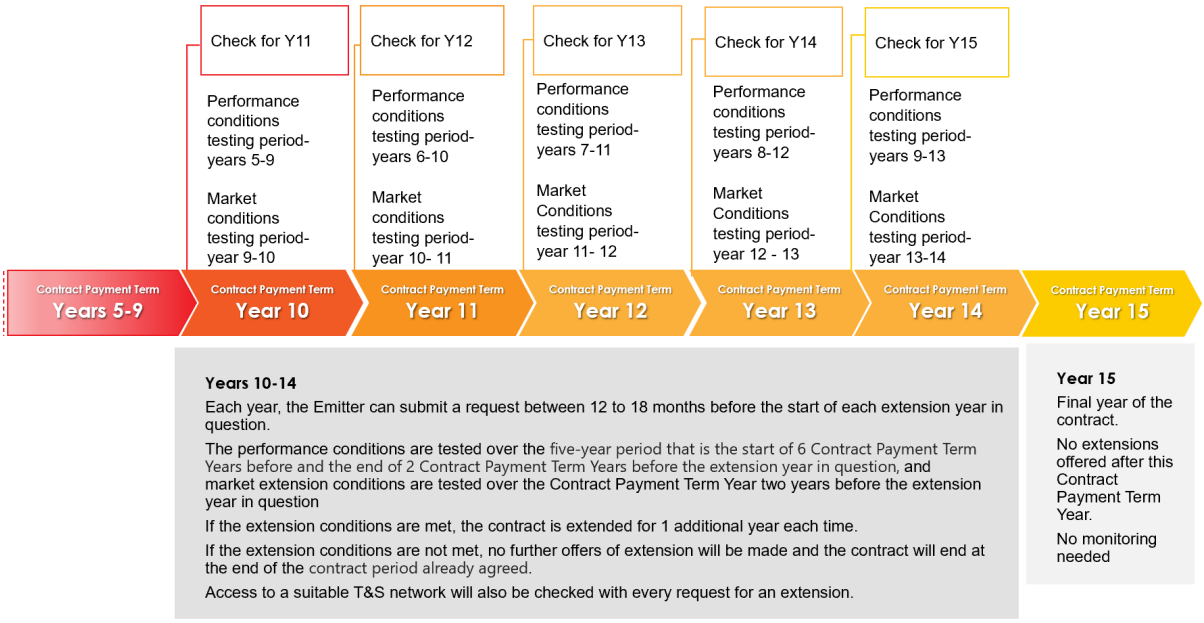
Strike price (£/t) + T&S charges (£/t) > UK ETS (£/t)

For ‘generic’ ICC Contract holders, negative emissions revenues will not be taken into account as part of the extension condition check, this will only be a consideration for Waste ICC Contract holders (as detailed in Section 19).

If an Emitter wants to request an extension, it would need to do so 12 to 18 months before the start of each extension year in question (e.g. to request an extension into Contract Payment Term Year 11, the Emitter would have to submit a request between halfway through Contract Payment Term Year 9 and the start of Contract Payment Term Year 10). The Emitter would also need to provide any information requested by the ICC Contract Counterparty to carry out an assessment as to whether the Emitter has met the extension conditions. After the checks are complete, the ICC Contract Counterparty will notify the Emitter whether it has or has not met the extension conditions or has provided insufficient information to enable the ICC Contract Counterparty to make this determination. If the Emitter is notified that it has met all the conditions, the term of the ICC Contract will be extended by one year. If the Emitter has not met all the conditions, the ICC Contract will expire at the end of the Contract period already agreed on a no-liability basis.

If a Contract is extended, a request can be submitted for subsequent one-year extensions. However, if at any point a Contract is not extended, and therefore expires, no subsequent offer to resume the Contract will be made. Figure 7 describes the sequence of performance and market conditions checks.

Figure 7: Timeline of performance and market conditions for ICC Contract extensions



Features of the Extension Period

The reference price for the extension period will be set as the prevailing market carbon price rather than a continuation of the fixed trajectory from the initial 10-year period.

Asymmetric payments will come to an end at the end of the initial 10-year period of the ICC Contract, and therefore the Emitter would be obliged to pay the ICC Contract Counterparty the difference between the prevailing market carbon price and the subsidy rate (the strike price plus T&S charges) should the former be greater than the latter. No cap will apply on payments due from the Emitter to the Counterparty under the generic ICC Contract. Under the Waste ICC Contract, the cap on symmetric payments will continue to apply (because symmetric payments apply under these contracts for the full contract term).

Price and volume assurance on FAs will come to an end at the end of the initial 10-year period of the generic ICC Contract and so Emitters will no longer forfeit any FAs or receive any compensation in respect of forfeited or protected FAs during the extension period.

12. Risk Treatment

Table 3: Project risks

Risk	Position
Construction Risk	Subject to affordability, we are proposing that the grant is set at the lesser of Y% of total capital costs or £X, where Y is up to but not

	including 50%. The approach to setting £X is subject to further consideration. This mechanism offers limited risk sharing and predominantly serves to offset the greater relative exposure of private capital to construction cost overruns in the case where a grant is received. The remainder of the overrun will need to be funded by the Emitter and will not be reimbursed through the ICC Contract. The industrial facility will bear the risk if there is damage to the process plant during construction of the carbon Capture Plant; if the carbon capture technology cannot be delivered at the relevant site; or if construction is not completed. Payments will not commence if the Emitter's carbon capture facility construction is not completed. The Secretary of State has the right to require repayment of any grant if, in the opinion of the Secretary of State, progress on the funded activities is not satisfactory. The Target Commissioning Window (TCW) will be 12 months, which will give facilities some protection from timing delays, with the industrial facility bearing the risks for any delays beyond this. This includes the risk of (i) contract erosion, if construction is complete and operations start after the TCW but before the Longstop Date and (ii) contract termination, if construction is incomplete or operations do not start by the Longstop Date. Noting that the TCW and Longstop Period will be extended day for day for delays caused by Force Majeure and the T&S Network. The Emitter is responsible for ensuring that they have the capability and capacity to construct and operate the facility.
Decommissioning Risk	The industrial facility is responsible for decommissioning Capture Plant in line with relevant industry standards.
Commercial Risk	The industrial facility is responsible for obtaining finance, managing its cashflows and continuing its commercial industrial operations.
Operating Risk	There will be an operating cost reopener after 12 Valid Billing Periods (see Section 4). This will include items for which a baseline volume can be determined and included in the Contract and for which actual volumes can be evidenced during the first year of operations. 'Overperformance', i.e. the capture and storage of more CO_2 than originally agreed, will receive the corresponding volumetric opex payments up to the opex payment cap for that year, the same is true of the capex payments up to the capex payment cap for that year. CO_2 must be produced as part of efficient operations of the industrial and Capture Plants, as described in Section 9, 'Carbon Intensity Reporting'. 'Underperformance', i.e. the capture of less CO_2 than originally agreed, will receive the corresponding volumetric opex and capex payments. This risk remains with the Emitter.

Table 4: Cross-chain risks

Risk	Position
User Stranded Asset	If the T&S Network is discontinued, and no alternative T&S option is deemed feasible, then the project will be considered stranded. If this scenario occurs, compensation will be provided for costs which are wholly attributable to the post-Agreement Date development, construction, testing, completion, commissioning or decommissioning of the Capture Plant; and break costs associated with the Emitter's contractual arrangements (excluding financing); up to the balance of the Total Capex Payment (excluding the return on capex). In all scenarios, compensation will be reduced to reflect any savings which have been, will be or are reasonably likely to be made by or received in respect of the project by the Emitter, which may include: • avoided out-of-pocket costs; • tax reliefs or reductions; • insurance proceeds; and • other compensation (including any net recoverable value from the Capture Plant). Additionally, our intention to return some forfeited Free Allowances (FA) (in respect of emissions that were expected to be captured but which were not, in line with the Actual Annual Capture Factor) is unchanged. Please refer to Section 7 above for more details on FAs.
T&S Commissioning Delay	In the event of a T&S Commissioning Delay event, we would expect that one or more of the Milestone Delivery Date (MDD), the Target Commissioning Window (TCW) and Longstop Date (LSD) of the ICC Contract are extended to match the T&S timelines because of a T&S Commissioning Delay event. Compensation will be provided for all irrecoverable and unavoidable out-of-pocket costs which have been, will be or are reasonably likely to be incurred in respect of the Project by the Emitter as a direct result of a T&S Commissioning Delay Event. These costs could constitute the following, and all costs must be justified to the satisfaction of the ICC Contract Counterparty: • Costs relating to staff required to preserve, maintain and recommission the Capture Plant; • Costs relating to extending warranties in respect of the Capture Plant and associated equipment; • Costs relating to extending insurance coverage in respect of the Capture Plant and associated equipment; • Other operating costs related to preserving and maintaining the Capture Plant. These costs will not include the following: • Total return component;

	• All costs associated with the Emitter's appointment and retention of professional advisers in relation to the Project; • All costs associated with the Emitter's financing arrangements in respect of the Project (including all interest incurred in respect of the Emitter's financing arrangements); • All capital costs required to preserve, maintain and recommission the Capture Plant; and • Staff bonuses. Compensation will not be provided for lost product revenue as a result of the timing mismatch. Note that in order to be eligible for the compensation set out above, the Emitter and Counterparty must agree that the Emitter's T&S Connection Works and all other OCPs have been fully completed, such that the Emitter would otherwise be ready to connect to the T&S Network if the T&S Network was available. Additionally, our intention to return some forfeited Free Allowances (FA) (in respect of emissions that were expected to be captured but which were not, in line with the Actual Annual Capture Factor) is unchanged. Please refer to Section 7 above for more details on FAs.
T&S Outages and T&S Capacity Constraints	If the T&S is experiencing an outage (CO_2 cannot be injected to the network) or T&S is not able to accept the agreed quantities of CO_2, (capacity constraint), and the Emitter is not at fault for this outage/constraint event, then the following treatment to the ICC Contract payments will be applied. Capex Payments (including the return on capex) will be based on the previous 12 months' performance[22], by multiplying the Average Achieved CO_2 Storage Rate achieved during the previous 12 months of operation[23] by the Measured CO_2 Input to the Capture Plant in order to calculate the Deemed CO_2 Output to T&S. We would expect Emitters to minimise their opex costs where possible, depending on CCUS technology type being used, for example during an outage, by turning off the Capture Plant if post-combustion capture technology is being used or bypassing the CO_2 conditioning and compression units if pre-combustion capture technology (or any other technology type or process which would require the industrial process to be halted in order for capture to be halted) is being used. During a constraint, by turning down their

[22] Note that when considering the previous 12 months of operation, we will not include periods where there has been (i) a T&S outage or capacity constraint (provided the T&S outage or capacity constraint does not arise out of or in connection with any act, omission, breach or default by the Emitter and provided the Capture Plant is not experiencing a simultaneous full capture outage event for non-T&S reasons), or (ii) a full industrial facility outage (which does not occur as a direct result of the T&S outage or capacity constraint) and there was therefore no CO_2 being produced.

[23] In the event that the T&S outage occurs within the first 12 months of the Emitter's Start Date, we are minded-to base capex payments on the Emitter's previous operating performance during the months prior to the T&S outage (i.e. if the outage occurs in month 8 then we will consider the Emitter's performance up to that point). If the outage were to occur immediately after the Start Date, then we are minded-to use the Emitter's OCP performance data to determine capex payments.

	Capture Plant operations to match the (reduced) T&S capacity as far as possible. Opex payments will be reduced during any T&S outage/ capacity constraint exceeding 24 hours by a set percentage (to reflect the steps that an Emitter should have taken to mitigate the effect of such an outage/constraint) as outlined in Annex 4 of the Front-End Agreement (based upon the duration of the outage/constraint, the type of technology and the extent of the outage/constraint). Compensation will not be provided for lost product revenue as a result of the T&S outage. If, during the T&S outage/constraint, the industrial facility is online but the Capture Plant is experiencing an outage due to a (continuing) non-T&S event (whether arising before or after the T&S outage event) then this treatment will not be applied, as no CO_2 would have been stored if the T&S Network had been available[24]. Additionally, our intention to return some forfeited Free Allowances (FA) (in respect of emissions that were expected to be captured but which were not, in line with the Actual Annual Capture Factor) is unchanged. Please refer to Section 7 above for more details on FAs.

13. Change in Law

The Contract sets out categories of Qualifying Change in Law (QCiL) and compensation that may be payable to the Emitter or the ICC Contract Counterparty if a QCiL occurs.

A QCiL is a:

(a) Discriminatory Change in Law,
(b) a Specific Change in Law,
(c) an Other Change in Law, or
(d) a Carbon Leakage Change in Law (CLCiL) [25],

which in the case of (a), (b) and (c) only, is not a Foreseeable Change in Law. In summary:

- a Discriminatory Change in Law is a Change in Law the terms of which specifically apply to the particular Project, Capture Plant or Emitter and not to any other project, Capture Plant or person;
- a Specific Change in Law is a Change in Law the terms of which specifically apply to industrial installations which deploy CO_2 Capture Technology (or their holding

[24] See Annex 2 of the ICC Contract for details of the tests required to prove that the Capture Plant is available, following a Capture Plant outage event.
[25] The Carbon Leakage Change in Law only applies where it is deemed that the CiL would result in a positive effect on the Emitter. Where there is a negative effect on the Emitter as a result of the CiL and the emitter is seeking QCiL protection, then they must prove that the CiL falls within one of the existing QCiL 'gates' (i.e. is a Discriminatory / Specific / Other Change in Law) and that is not a Foreseeable Change in Law. In addition, the claim must not be in respect of reduced FA allocation (i.e. the claim is being made in respect of some other negative impact of a UK CBAM / alternative carbon leakage policy). The CLCiL regime will not be included in the Waste ICC Contract, although this position will be kept under review.

companies) (or the CO_2 Capture Technology forming part of such installations) and not to other industrial installations;
- an Other Change in Law is a Change in Law which does not specifically apply to industrial installations which deploy CO_2 Capture Technology but has an undue, discriminatory effect on the Emitter/project's out-of-pocket costs or savings when compared with those of specified comparator groups;

Within this update we are also specifying:

- a Carbon Leakage Change in Law (CLCiL) is a Change in Law which implements a mechanism/measure/standard that is designed to mitigate against carbon leakage and/or the risk of carbon leakage (whether or not it is designed to achieve any other outcomes) that would otherwise arise for one (1) or more Industrial Installation(s) which deploys Eligible Industrial Technology and which the ICC Contract Counterparty considers has given rise to or resulted in, or will or is reasonably likely to, give rise to or result in, CLCiL Revenue.

Compensation will be payable[26] where the Emitter is able to provide evidence that a QCiL[27]:

- permanently prevents the construction, testing, completion or commissioning of the Capture Plant (QCiL Construction Event Payment);
- affects a project's capex (QCiL Capex Payment) / opex (QCiL Opex Payment);
- affects an Installation's Metered CO_2 Output to T&S (QCiL Adjusted Capture Payment); or
- permanently prevents a Capture Plant from operating (QCiL Operations Cessation Event Payment).

In the event of a QCiL Capex Payment[28], the compensation will be made as either a lump sum and/or staged payments.

In the event of a QCiL Opex Payment[29], the compensation will be made as either an adjustment to the strike price (which would be increased if there are net opex costs and decreased if there are net opex savings) or as staged payments.

Any compensation payable in respect of CLCiL Revenue will be considered in the QCiL Opex Payment calculation. CLCiL Revenue covers all revenue, income and savings which have been, will be or are reasonably likely to be made/received by the Emitter (and/or any of its affiliates) in respect of the product(s) manufactured, material(s) treated and/or service(s) provided by the Industrial Installation arising as a result or in anticipation of such CLCiL being implemented, occurring or becoming effective.

If there is an Adjusted Capture Period, a QCiL Adjusted Capture Payment will be payable. An Adjusted Capture Period is a period during the term of the ICC Contract in which the Metered CO_2 Output to T&S is reduced or increased as a direct result of a QCiL.

26 QCiL payments will be effected at the ICC Contract Counterparty's election (after consultation with the Emitter) to decide how to effect the relevant QCiL compensation.
27 Further details of compensation payable in QCiL scenarios can be found in Section 3 of the April Update.
28 In the event of QCiL Net Capital Savings, compensation will be payable by the emitter to the ICC Contract Counterparty.
29 In the event of QCiL Net Operating Savings, compensation will be payable by the emitter to the ICC Contract Counterparty.

A QCiL Adjusted Capture Payment will be made as a lump sum payment, staged payments, and/or an adjustment to the Metered CO_2 Output to T&S. Details of the QCiL Construction Event Payment and QCiL Operations Cessation Event Payments are included in the Suspension, Penalties and Termination Section 15.

14. Milestones and Commissioning

Milestone Requirements

The Milestone Delivery Date occurs 18 months after the ICC Contract has been entered into. Once the ICC Contract has been entered into, the Emitter will have 18 months to fulfil either one of two milestone requirements set out in the ICC Contract.

These requirements are either:

- that the Emitter and its direct shareholders have in aggregate spent ten (10) percent or more of the project's pre-commissioning costs (which will be an amount agreed within negotiations) on the project; or
- that specified project commitments (for example, delivery to the ICC Contract Counterparty of evidence that the Emitter has, or will have, sufficient financial resources to meet the total financial commitments required to commission the project) have been complied with or fulfilled.

Commissioning

The Initial Target Commissioning Window (TCW) will be defined as the 12-month period within which the project's Target Commissioning Date falls. Each Emitter has the flexibility to commission its Capture Plant at any time within the TCW[30].

- The ICC Contract Payment Term will commence on the earlier of the 'Start Date' (when the OCPs are fulfilled/waived, see section below) and the last day of the TCW; payments cannot commence before the first day of the TCW.
- A Longstop Date will be defined as the last day of the 12-month Longstop Period following the last day of the TCW.
- The facility can satisfy OCPs at any time during the Longstop Period and enter the operational phase of the Contract, where the payment term will be eroded commensurate to the day-for-day delay beyond the TCW.
- Failure to fulfil the relevant OCPs by the Longstop Date will give the ICC Contract Counterparty the right, but not obligation, to terminate the ICC Contract.
- The Milestone Delivery Date, TCW and Longstop Period will be extended day-for-day for any delays which occur due to Force Majeure and/or the T&S Network commissioning being delayed (provided the Emitter satisfies certain requirements/conditions).

[30] This iteration of the ICC and Waste ICC business model has not been designed to incorporate 'phasing' of projects under a single Contract and the specific contractual features of the model set out in this document, including satisfaction of OCPs by the Emitter (or waived the ICC Contract Counterparty) will be need to fulfilled based on the estimated total operating capacity of the Capture Plant coming online as per the timelines submitted and agreed as part of Phase-2 Cluster Sequencing Process.

- The Initial Target Commissioning Window shall be a 12-month period which will be set out in the Front-End Agreement and determined in the due diligence and negotiation phase prior to the Agreement Date and with reference to the wider Cluster delivery plan.

Operational Conditions Precedent

In order to trigger the Start Date and payment of contractual payments, the Emitter must fulfil specified Operational Conditions Precedents (OCPs).

The proposed OCPs include the following[31]:

- Evidence that the CO_2 capture rate is equal to or greater than the higher of i) 85% and ii) 5 percentage points lower than the CO_2 capture rate included in the Emitter's Phase-2 application;
- Evidence that the CO_2 flowrate directed to the T&S Network meets the required CO_2 flowrate from the Capture Plant to the T&S Network as agreed in the ICC Agreement;
- Evidence that the CO_2 flow rate directed to CO_2 utilisation meets the required CO_2 flow rate from the Capture Plant to CO_2 utilisation as agreed in the ICC Agreement (if applicable);
- Evidence that the Emitter is complying with the Outlet CO_2 Metering Obligations (which include the captured CO_2 complying with specified standards (i.e. compositional, pressure and temperature limits at entry to the T&S Network)), and the Emitter has provided a metering schematic diagram[32], in relation to the Outlet CO_2 Metering Equipment;
- Evidence that the Emitter is complying with the Inlet CO_2 Measurement Obligations and the Emitter has provided a schematic diagram of the Inlet CO_2 Measurement Equipment[33];
- Evidence that the project has connected to the T&S Network;
- For CHP projects:
    - (i) for CHP-only projects[34] and CHP included projects[35], a valid full or partial CHPQA certificate[36];
    - (ii) for CHP-only projects, proof of supplying energy (heat and/or electricity) to at least one industrial facility[37].
- For Waste ICC Contract holders only:
    - (i) evidence that the Emitter is complying with its undertakings relating to the installation, configuration and operation of each Biogenic CEMS and provision of a date and time stamped copy of the schematic diagram showing the locations of each Biogenic CEMS[38]

[31] Please see the ICC Contract, published in parallel to this document, for a full list of proposed OCPs.
[32] Please see the ICC Contract, published in parallel to this document, for a full list of measurement obligations.
[33] Please see the ICC Contract, published in parallel to this document, for a full list of measurement obligations
[34] ICC projects that are deploying CCUS and capturing emissions from a CHP facility only and not combining flue gas streams with other industrial process(es). Please note that this does not refer to the combination of multiple Emitters' flue gas streams in a CaaS Group, but the combination of flue gas streams within the wider industrial facility
[35] ICC projects that are deploying CCUS to a CHP facility and an industrial process(es) whereby the CHP facility's flue gas stream is combined with other industrial process(es)' streams. Please note that this does not refer to the combination of multiple Emitters' flue gas streams in a CaaS Group, but the combination of flue gas streams within the wider industrial facility.
[36] Please note, the CHPQA certificate requirement OCP will not be applicable to EfW projects.
[37] For this purpose only, we define an 'industrial facility'' as a facility or part of a facility that is classified under SIC codes 5 to 33 (excluding 24.46). Capture plants that are solely capturing emissions from the CHP facility are also an eligible end-use of the energy output from the CHP, but only where energy output from the CHP is also provided to other eligible industrial facilities.
[38] Please see the Waste ICC Contract Biogenic CEMS rider for further information.

- (ii) evidence that the Emitter satisfies the Recovery Operation (R1) Energy Efficiency Threshold as confirmed by the relevant Competent Authority.

15. Suspension, Termination and Compensation

Payment Suspensions

Suspension of payments is available to the ICC Contract Counterparty in circumstances where:

- the Emitter fails to provide the required CO_2 measurement data;
- the Emitter is in breach of the Measurement Equipment Schematic Obligation (requirement to notify the ICC Contract Counterparty of material changes to measurement equipment);
- the Emitter fails to permit the ICC Contract Counterparty to exercise the Measurement Equipment Access Right;
- the Emitter fails to give an Opex Costs Early Reopener Notice to the ICC Contract Counterparty;
- the Emitter is in breach of an Automatic Data Systems Obligation;
- the Emitter breaches a Full Capture Outage Event Notification Obligation;
- the Emitter is in breach of its obligation to permit the ICC Contract Counterparty to exercise the Full Capture Outage Event Access Right;
- the Emitter (i) fails to provide a capture rate breach rectification plan (which sets out how they will achieve a CO_2 capture rate equal to or greater than the higher of (i) 80% and (ii) 10 percentage points less than the CO_2 capture rate achieved during OCPs for 3 consecutive billing periods[39]) to the ICC Contract Counterparty within 6 months of the ICC Contract Counterparty notifying the Emitter of a Minimum CO_2 Capture Rate Breach, or (ii) submits an invalid plan;
- the Emitter fails to provide a valid carbon intensity report within 30 business days of receiving a non-compliance notice, or fails to provide supporting information with 30 business days of the non-compliance notice;
- the Emitter fails to respond to a T&S Prolonged Unavailability Event Notice within 6 months after the T&S Prolonged Unavailability Event Notice, and/or, where applicable, the Emitter fails to deliver a T&S Prolonged Unavailability Further Response Notice;
- the Emitter gives a notice that it intends to provide an Alternative T&S Network Solution Plan, but does not by 18 months after the T&S Prolonged Unavailability Event Notice;
- the ICC Contract Counterparty requests for further evidence of supporting information in response to a notice or Alternative T&S Network Solution Plan provided by the Emitter, and the Emitter fails to provide this within 20 business days;
- the Emitter is in breach of no cumulation of subsidy;
- the Emitter fails to comply with no cumulation of subsidy, state aid and/or union funding undertaking;

[39] A Billing Period is every Settlement Unit in a calendar month.

- the Emitter does not transfer the correct number of FAs to the ICC Contract Counterparty by the FA Forfeiture Deadline (3 business days after the FA Allocation Deadline);
- the Emitter fails to comply with technology undertaking;
- the Emitter fails to follow the C_{plant_ratio} adjustment procedure;
- the Emitter fails to provide Total Emissions data;
- the Emitter fails to comply with its reporting obligations relating to Negative Emissions[40],
- the Emitter that has opted into participation in Negative Emission markets, fails to comply with its Greenhouse Gas Removal Audit Right to the ICC Contract Counterparty,
- the Emitter that has opted into participation in Negative Emission markets, accumulated credit value exceeds the Accumulated GGR Credits Amount Cap,
- for Waste ICC Contract holders only, an applicable plant loses its R1 efficiency rating (as confirmed by the relevant authority);
- for Waste ICC Contract holders only, if the Emitter fails to comply with its obligation to permit the Waste ICC Contract Counterparty to exercise the Biogenic CEMS Audit Right (see Section 19 for further information).

Termination

Termination of the Contract will be an option in instances of:

- Pre-Start Date breaches (e.g. failure to satisfy Conditions Precedent and if a default termination event, see below, occurs before the Start Date);
- Prolonged Force Majeure;
- T&S Prolonged Unavailability Event;
- Default termination events (e.g. Emitter insolvency; fraud; non-payment; breach of key obligations relating to ownership of the Capture Plant, CO_2 measurement, cross-default, Non-compliant Carbon Intensity Reporting, Minimum CO_2 Capture Rate Breach; prolonged non-transfer of the correct number of FAs);
- Qualifying Change in Law termination.

The next sections set out further information on each of these events.

Pre-Start Date Termination

The ICC Contract Counterparty will have the right to terminate the Contract if:

- A Termination Event has occurred (pre-Start Date) and is continuing;
- The Emitter fails to fulfil any of the ICPs within 20 business days of the Agreement Date;
- The Emitter fails to fulfil any of the OCPs by the Longstop Date;
- The Emitter fails to fulfil either Milestone Requirement by the Milestone Delivery Date, or fails to deliver a Milestone Requirement Notice by the Milestone Delivery Date;
- At any time prior to the Start Date, any Director's Certificate is not true, complete, or accurate in any material respect or is misleading.

[40] BEIS is still working through the specific detail of this regime, the intent is not to require an Auditor's report in respect of those ICC Emitters with limited prospect of generating negative emissions.

Prolonged Force Majeure

The ICC Contract Counterparty will have the right to terminate the ICC Contract where the Emitter is delayed in developing, constructing, completing, testing and/or commissioning the Capture Plant for a continuous period of 18 months due to a continuing, unresolved event of Force Majeure that first occurs between the Agreement Date and Milestone Satisfaction Date.

T&S Prolonged Unavailability Event

This is a termination right for the ICC Contract Counterparty, which arises where a T&S Prolonged Unavailability Event occurs, such as:

- A Full T&S Outage Event which lasts for at least 6 months;
- A T&S Commissioning Delay which lasts for at least 6 months; or
- A T&S Cessation Event, which means the occurrence of one of the following:
    - A notice of discontinuation is issued by the Secretary of State to the T&S Operator pursuant to the discontinuation agreement entered into between the T&S Operator and the Secretary of State; or
    - The licence of the T&S Operator is (i) revoked; and (ii) is not transferred to a substitute T&S Operator, such that the T&S Network ceases to operate or the Emitter is no longer able to connect to the T&S Network; or
    - There is a determination made by the relevant Competent Authority that the Emitter's connection to the T&S Network is no longer viable.

If a T&S Prolonged Unavailability Event occurs, the ICC Contract Counterparty can give a T&S Prolonged Unavailability Event Notice to the Emitter which shall specify the date on and from which the ICC Contract Counterparty has a right, but not obligation, to terminate the ICC Contract, which is the T&S Prolonged Unavailability Remediation Deadline (30 months after the T&S Prolonged Unavailability Event Notice).

Within 6 months of a T&S Prolonged Unavailability Event Notice, the Emitter must provide the ICC Contract Counterparty with a T&S Prolonged Unavailability Response Notice, along with supporting information and evidence, specifying either:

(i) The T&S Prolonged Unavailability Event is no longer continuing; or

(ii) The Emitter considers that the T&S Prolonged Unavailability Event will be remedied by the T&S Prolonged Unavailability Remediation Deadline (attaching supporting evidence, which we anticipate will include evidence from the relevant T&S Operator); or

(iii) The Emitter intends to provide the ICC Contract Counterparty with an Alternative T&S Network Solution Plan by 18 months after the T&S Prolonged Unavailability Event Notice; or

(iv) The Emitter considers that the T&S Prolonged Unavailability Event will not be remedied by the T&S Prolonged Unavailability Remediation Deadline and that the Emitter cannot provide a feasible Alternative T&S Network Solution Plan for one of the following reasons:

- It is not technically feasible for the Emitter, acting in accordance with a Reasonable and Prudent Standard, to connect the Installation to an alternative

CO_2 Delivery Point and T&S Network or permanent storage of CO_2 from the Installation;
    - The implementation of an Alternative T&S Network Solution Plan would be illegal;
    - It is not economically feasible for the Emitter, acting in accordance with a Reasonable and Prudent Standard, to connect to an alternative CO_2 Delivery Point and T&S Network or permanent storage of CO_2 from the Emitter;
    - There are no feasible alternative T&S Networks which can permanently store the CO_2 from the Installation; and/or
    - Any other reason which will or is reasonably likely to justify the decision not to provide an Alternative T&S Network Solution Plan.

If an Emitter fails to comply with a T&S Prolonged Unavailability Procedure Obligation, such as:

- An Emitter fails to give a T&S Prolonged Unavailability Response Notice by 6 months after the T&S Prolonged Unavailability Event Notice;
- If applicable, an Emitter fails to give a T&S Prolonged Unavailability Further Response Notice;
- An Emitter gives a notice pursuant to (iii) above specifying that it intends to provide the ICC Contract Counterparty with an Alternative T&S Network Solution Plan, and then does not provide such a plan by 18 months after the T&S Prolonged Unavailability Event Notice;
- If the ICC Contract Counterparty asks for additional supporting information via an Alternative T&S Network Review Notice and the Emitter fails to provide this within 20 business days; or
- If the Emitter fails to provide an amended Alternative T&S Network Solution Plan which includes amendments specified by the ICC Contract Counterparty in an Alternative T&S Network Review Notice within 20 business days;

then the ICC Contract Counterparty will have the right (but not obligation) to suspend any payments to the Emitter (on notice to the Emitter). If the Emitter subsequently cures by complying with the relevant T&S Prolonged Unavailability Procedure Obligation, then any payments which were suspended will be paid, without interest, to the Emitter.

If an Emitter submits a T&S Prolonged Unavailability Response Notice pursuant to (iv) above, along with sufficient supporting information to verify this, then the ICC Contract Counterparty will have the right but not obligation to give a notice specifying the date on which termination of the ICC Contract is designated to take effect.

If the T&S Prolonged Unavailability Event is continuing after the T&S Prolonged Unavailability Remediation Deadline, no Alternative T&S Network Solution Plan has been agreed, or an Alternative T&S Network Solution Plan has been agreed but the Emitter has failed to implement such a plan in accordance with its terms (in order to remedy the T&S Prolonged Unavailability Event) the ICC Contract Counterparty will have the right (but not obligation) to issue a notice specifying the date on which termination of the ICC Contract is designated to take effect.

Default Termination

The ICC Contract Counterparty has the right to terminate the Contract (for default) where one of the following has occurred and is continuing, at any time on or after the Start Date[41]:

- The Emitter is insolvent (or similar);
- The Emitter defaults on credit support;
- There has been a non-payment by the Emitter which is not remedied within a cure period;
- The Emitter has breached key obligations;
- A Technical Compliance Termination Event or a Measurement Equipment Access Termination Event occurs;
- The Emitter has breached the minimum CO_2 capture rate obligation and a capture rate termination event occurs;
- A Carbon Intensity Termination Event occurs;
- A misleading CO_2 Measurement Data Termination Event occurs;
- A Misleading Full Capture Outage Event Notification Termination Event or a Full Capture Outage Event Access Termination Event occurs;
- The CIF GFA is terminated due to the Emitter's breach or default;
- Failure to forfeit FAs;
- Failure to provide the relevant collateral;
- A GGR Termination Event occurs, through the provision of: i) misleading or reckless information, ii) non-compliance with restrictions, iii) Accumulated GGR Credits Amount Cap Termination Event occurs; or
- For Waste ICC Contract holders only, a Biogenic CEMS Information Termination Event resulting from misleading or reckless information.

Qualifying Change in Law Termination

If a QCiL is implemented, occurs or becomes effective and gives rise to or results in a QCiL Construction Event or QCiL Operations Cessation Event, the ICC Contract Counterparty must give notice to the Emitter terminating the ICC Contract.

If a QCiL is implemented, occurs or becomes effective and either:

- does not constitute a QCiL Construction Event and the amount of QCiL Compensation that would otherwise be payable is greater than the amount of the QCiL Construction Event Payment that would have been payable if such a QCiL were to have constituted a QCiL Construction Event; or
- does not constitute a QCiL Operations Cessation Event and the amount of QCiL Compensation that would otherwise be payable is greater than the amount of the QCiL Operations Cessation Event Payment that would have been payable if such QCiL were to have constituted a QCiL Operations Cessation Event,

then the ICC Contract Counterparty has the right, but not the obligation, to give notice to the Emitter terminating the ICC Contract.

[41] BEIS is considering potential termination rights related to the FA forfeiture and reconciliation process.

Non-Compliant Carbon Intensity Reporting

The ICC Contract Counterparty will have the right (but not obligation) to terminate the ICC Contract if it considers that the Emitter has provided a misleading declaration and/or data in their (Carbon Intensity) report. The ICC Contract Counterparty will also have the right (but not obligation) to terminate the Contract if it considers that the data provided in the reports shows that the Emitter has been creating excess CO_2 for the purpose of receiving additional subsidies under the business model.

If a Carbon Intensity Baseline Report or Carbon Intensity Report is not submitted by the relevant deadline or the Supporting Information requested by the ICC Contract Counterparty is not received by the relevant deadline, the ICC Contract Counterparty will send a non-compliance notice to the Emitter. The Emitter will then have 30 Business Days from receipt of the notice to submit a valid report/ provide the relevant Supporting Information (as applicable). If a valid report/the relevant Supporting Information is not received by the ICC Contract Counterparty by this time, payments under the ICC Contract may be suspended. If the Emitter subsequently submits a valid report/provides the relevant Supporting Information, it will receive the suspended payments without interest.

Prolonged Minimum CO_2 Capture Rate Breach: Termination

A post Start Date termination right for the ICC Contract Counterparty arises where an Emitter's CO_2 capture rate is less than the Minimum CO_2 Capture Rate for either three consecutive Billing Periods or three non-consecutive Billing Periods within six consecutive Billing Periods, resulting in a Minimum CO_2 Capture Rate Breach. For this purpose, the Minimum CO_2 Capture Rate is a CO_2 capture rate which is equal to or greater than the higher of (i) 10 percentage points less than the CO_2 capture rate demonstrated during OCP acceptance tests[42] and (ii) 80%.

Once a Minimum CO_2 Capture Rate Breach has occurred, the ICC Contract Counterparty can give an initial notice to the Emitter. This notice will specify the date on and from which the ICC Contract Counterparty can give the Emitter a termination notice in respect of the Minimum CO_2 Capture Rate Breach, which is the date which falls 18 months after the date of this notice (the Capture Rate Breach Deadline[43]).

Following this initial notice, the ICC Contract Counterparty may terminate the ICC Contract on and from the Capture Rate Breach Deadline if:

- the Emitter fails to achieve the Minimum CO_2 Capture Rate for 3 consecutive Billing Periods by the Capture Rate Breach Deadline; or
- the Emitter fails to achieve the Minimum CO_2 Capture Rate for 3 consecutive Billing Periods by the date agreed by the ICC Contract Counterparty, which is later than the Capture Rate Breach Deadline, in a rectification plan that has been expressly approved by the ICC Contract Counterparty; or
- the Emitter fails to implement a rectification plan that has been expressly approved by the ICC Contract Counterparty in accordance with its terms (i.e. where rectification is

[42] Noting that this must be equal to or greater than the higher of (i) 5 percentage points lower than the CO_2 capture rate estimated in the project's Phase-2 application, and (ii) 85%.
[43] Note that this date may be extended for each day of delay caused by an FM event or a T&S Outage Event (both a full T&S outage and a capacity constraint).

anticipated to take longer than the Capture Rate Breach Deadline and the Emitter has failed to satisfy specified milestones/take certain actions in accordance with the deadlines in its rectification plan).

Prolonged Minimum CO_2 Capture Rate Breach: Suspension of Payments

There is a separate, but related, right for the ICC Contract Counterparty to suspend payments following a Minimum CO_2 Capture Rate Breach (as described above). This right arises where the Emitter is required to provide a capture rate breach rectification plan (as above) and then either fails to submit a plan within 6 months of the initial notice or submits a plan but the plan is invalid because it does meet the minimum requirements.

In either case, after the 6 month deadline has passed, the ICC Contract Counterparty can elect to suspend any payments which would otherwise be payable to the Emitter until the Emitter either: (i) achieves the Minimum CO_2 Capture Rate for 3 consecutive billing periods by the Capture Rate Breach Deadline (see above); or (ii) submits a valid capture rate breach rectification plan which is approved by the ICC Contract Counterparty, the Counterparty shall pay any amounts to the Emitter which would have been payable but for the operation of this right to suspend payments.

Compensation

Compensation in the above termination scenarios will be as follows:

- Pre-Start Date termination and Prolonged Force Majeure termination will be on a no-liability basis and therefore no compensation will be payable to the Emitter or to the ICC Contract Counterparty.
- Termination due to a QCiL permanently preventing construction will result in compensation being payable by the ICC Contract Counterparty to the Emitter. This compensation may (to the extent that these costs arise) include:
    - costs which are wholly attributable to the post-Agreement Date development, construction, testing, completion, commissioning and decommissioning of the Capture Plant; and break costs associated with the Emitter's contractual arrangements (excluding financing);
    - but excluding all other costs which will or are reasonably likely to be payable by the Emitter in connection with the QCiL Construction Event and all costs associated with the Emitter's financing arrangements in respect of the project,
    - the amount of compensation available will be reduced by any savings made by the Emitter, which may include avoided out-of-pocket costs; tax relief or reductions; insurance proceeds and other compensation (including the net recoverable value from the Capture Plant).
- Termination due to a QCiL which permanently prevents operations will result in compensation being payable by the ICC Contract Counterparty to the Emitter. This compensation may include:
    - the remaining capex payments (excluding the return on capex) that the Emitter would have received but for the QCiL Operations Cessation Event; and
    - all irrecoverable and unavoidable out-of-pocket costs which have been, will be or are reasonably likely to be incurred by the Emitter in respect of the Project arising

directly from the relevant QCiL Operations Cessation Event, but excluding financing, hedging, decommissioning and environmental clean-up costs,
    - the amount of compensation available will be reduced by any savings made by the Emitter, which may include avoided out-of-pocket costs; tax relief or reductions; insurance proceeds and other compensation (including the net recoverable value from the Capture Plant[44]).
- T&S prolonged unavailability:
    - In the scenario where the ICC Contract is terminated as a result of T&S prolonged unavailability then the compensation will (to the extent that these costs arise) include costs which are wholly attributable to the post-Agreement Date development, construction, testing, completion, commissioning or decommissioning of the Capture Plant; and break costs associated with the Emitter's contractual arrangements (excluding financing); up to the balance of the Total Capex Payment (excluding the return on capex).
    - Compensation will be reduced to reflect any savings which have been, will be or are reasonably likely to be made by or received in respect of the project by the Emitter, which may include:
        - avoided out-of-pocket costs;
        - tax reliefs or reductions;
        - insurance proceeds; and
        - other compensation (including any net recoverable value from the Capture Plant)[45]).
- Termination due to Default will result in compensation being payable by the Emitter to the ICC Contract Counterparty, calculated using the Default Termination Payment formula:

Default Termination Payment = f(t) x Maximum Annual CO_2 Capture Quantity (tCO_2/pa) x Termination Fee Rate (£/tCO_2)

whereby f(t) refers to the stage of the ICC Contract, with the termination being profiled depending on what Contract Payment Term of the ICC Contract the project is in (the ICC Contract duration is 10 years with a possible extension of 5 years awarded depending on certain conditions being met – for the extension years, the f(t) value will be fixed). For years 1-8, f(t) will be a fixed value of 1. For year 9, this will reduce to two-thirds and for the remaining years (10, 11, 12, 13, 14, 15) to one-third (see Table 5 below). The Termination Fee Rate is a nominal figure, and we are proposing using a value of £5/tCO_2.

Table 5: Value of f(t) for Contract Payment Term

Year	f(t)
1-8	1
9	2/3
10-15	1/3

An Emitter will not be required to pay more than one Default Termination Payment under a single ICC Contract. In the event that more than one Termination Event has arisen on or after

[44] Please see Page 46 of the ICC Contract for the definition of Net Recoverable Value.
[45] Please see Page 46 of the ICC Contract for the definition of Net Recoverable Value.

the Start Date, and the ICC Contract Counterparty has exercised its right to terminate the ICC Contract, a single fee will apply based on the above calculation appropriate to the relevant termination cause.

If the ICC Contract Counterparty suspends payments to the Emitter for an event that subsequently results in termination and a Default Termination Payment being payable (e.g. for a failure to remedy a Prolonged Minimum CO_2 Capture Rate Breach (see above)), the Default Termination Payment will be reduced by any Payments which the ICC Contract Counterparty has suspended and not subsequently paid to the Emitter (see above).

Reconciliations in a termination scenario

We are currently developing our position on timings for FA forfeiture and reconciliation. As part of this, we are considering how these processes may need to vary if a Termination Event occurs.

16. Monitoring, Reporting and Verification[46]

Pre-capture monitoring requirement[47]

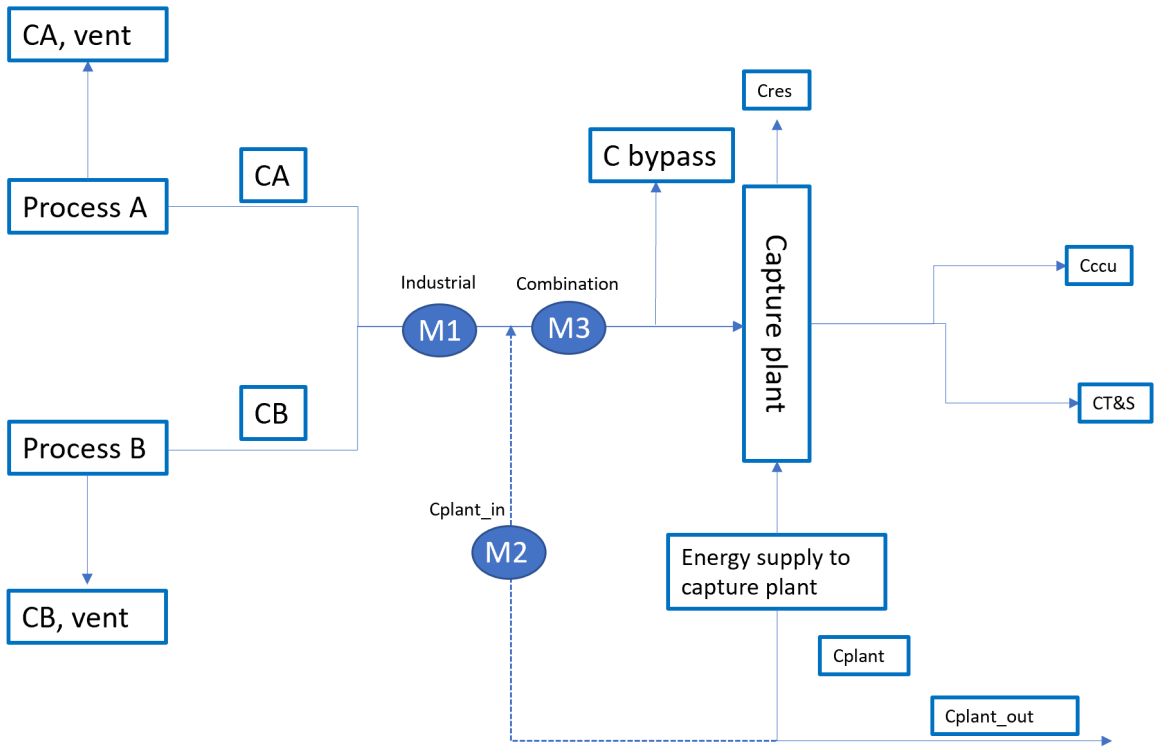
Effective monitoring, reporting and verification using accurate measurement methods such as metering or calculation is important for determining the CO_2 Capture Rate, CO_2 quality and quantity of the CO_2 captured from the Industrial Installation and sent for permanent storage.

For the purposes of the ICC Contract, we want to ensure pre-capture measurement methods achieve a measurement uncertainty of ≤7.5% and daily reported granularity. These are minimum requirements that must be achieved (we have been and are in the process of developing technical schedules annexed to the contract which aims to set out more detail on the requirements of each measurement method[48]). The following sets out our approach on the pre-capture monitoring requirements.

For the purpose of the business model, it is essential to monitor CO_2 at a minimum of two (2) out of three (3) measurement points (i.e. streams of CO_2 directed to the Capture Plant) highlighted below, if applicable (please refer to Figure 8 for more information):

- M1 industrial stream (the "Measured CO_2 Input from Industrial Installation")
- M2 $C_{plant\ in}$ stream (the “Auxiliary CO_2 Generated Input")
- M3 combination stream (the "Measured CO_2 Input")

Figure 8: CO_2 measurement points



[46] Please refer to Part 19 for the 'Biogenic CEMS' monitoring, reporting and verification requirements for Waste ICC Contract holders
[47] Please note that the pre-capture metering position contained within this document may be subject to change
[48] Please refer to Annex 8 of the ICC Contract published in parallel for the pre-capture metering annex; other technical annexes will be developed in due course

For industrial facilities that are not part of a CaaS group, use of direct measurement via pre-capture meter(s) at the two designated measurement points (incorporating both flow measurement and compositional analysis, to determine the mass flow rate of CO_2) will be the default measuring method. However, provided the daily reported granularity (determined in accordance with the appropriate technical annex) and measurement uncertainty (≤ 7.5%) are met, there are two exceptions to this default measurement method:

1. Emitters that meet both of the following criteria will be allowed to use an indirect (UK ETS compliant) calculation methodology to measure the Measured CO_2 Input, the Measured CO_2 Input from the Industrial Installation and/or the Auxiliary CO_2 Generated Input (as applicable):
    a. the CO_2 routed to the Capture Plant is solely sourced from the combustion of homogenous gaseous or liquid fuel(s); and
    b. Have existing, or will install, fiscal quality metering (flow and composition) of this fuel.
2. Where there are site-specific constraints which make the installation of pre-capture metering equipment unfeasible from a technical perspective, or prohibitively expensive, we will allow the Emitter to use Capture Plant stack metering of the residual CO_2 emissions emitted to atmosphere (i.e., a meter at the Capture Plant stack) to determine the Measured CO_2 Input.

The measurement method(s) for the measurement of the Measured CO_2 Input, the Measured CO_2 Input from the Industrial Installation and/or the Auxiliary CO_2 Generated Input (as applicable), will be determined by BEIS on a case-by-case basis during negotiations, having regard to information provided by the Emitter, to ensure the business model requirements are met. We plan to provide detailed guidance to help Emitters determine whether an exemption to pre-capture metering applies and an indirect (UK ETS complaint) calculation methodology or capture plant stack metering could be used.

Pre-capture meter (default measurement method) data requirements

This section outlines our approach to data frequency, missing data and inaccurate data when using the pre-capture meter. It doesn't apply to an indirect (UK ETS compliant) calculation methodology or the Capture Plant stack meter; further details on data requirements relating to an indirect (UK ETS compliant) methodology and Capture Plant stack meter will be provided in due course.

Missing Data:

1. We expect the pre-capture measurement equipment to take measurements at least once every minute.
2. If there are more than 60 minutes of missing measurements in any Settlement Unit then the Settlement Unit is deemed to be invalid and the Achieved CO_2 Capture Rate, Achieved CO_2 Storage Rate and/or Achieved CO_2 Utilisation Rate (as applicable) for that Settlement Unit will be deemed to be equal to zero (0).
3. If there are more than five (5) invalid Settlement Units in a Billing Period, or more than twenty (20) invalid Settlement Units within a period of twelve (12) consecutive Billing Periods, then the Emitter will be deemed to have breached certain undertakings in relation to the measurement equipment and the measurement data.

4. If the Emitter breaches a measurement obligation, it will be required to remediate such a breach and if it fails to do so, a Technical Compliance Termination Event will be deemed to have occurred and the ICC Contract Counterparty will have a right to terminate the ICC Contract. If the Emitter breaches a measurement data obligation, the ICC Contract Counterparty will have a right to suspend payments and, if is technically feasible to do so, the Emitter will be required to provide revised measurement data. If the ICC Contract Counterparty provides misleading measurement data or its failure to provide data is misleading, then a Misleading CO_2 Measurement Data Termination Event will be deemed to have occurred and the ICC Contract Counterparty will have the right to terminate the ICC Contract.

Inaccurate Data:

1. The Emitter is required to ensure that all measurement data provided on or behalf of the Emitter is true, complete and accurate in all material respects and is not misleading.
2. If the Emitter provides inaccurate data:
    a. if it is technically feasible to correct such inaccurate data, the Emitter will be required to correct such inaccurate data, and this will be reflected in a future Billing Statement.
    b. if it is not technically feasible to correct such inaccurate data, such inaccurate data will be treated as missing data (i.e. if there are more than 60 minutes of missing measurements in any Settlement Unit then the Settlement Unit is deemed to be invalid and the Achieved CO_2 Capture Rate, Achieved CO_2 Storage Rate and/or Achieved CO_2 Utilisation Rate (as applicable) for that Settlement Unit will be deemed to be equal to zero (0) for the purposes of the ICC Contract).
3. If there are more than five (5) invalid Settlement Units in a Billing Period, or more than twenty (20) invalid Settlement Units within a period of twelve (12) consecutive Billing Periods, then the Emitter will be deemed to have breached certain undertakings in relation to the measurement equipment and the measurement data.
4. If the Emitter breaches a measurement obligation, it will be required to remediate such a breach and if it fails to do so, a Technical Compliance Termination Event will be deemed to have occurred and the ICC Contract Counterparty will have a right to terminate the ICC Contract. If the ICC Contract Counterparty provides misleading measurement data or its failure to provide data is misleading, then a Misleading CO_2 Measurement Data Termination Event will be deemed to have occurred and the ICC Contract Counterparty will have the right to terminate the ICC Contract.

Economic Benefits and Supply Chain Reporting

In April 2022, we provided an update on the DPA[49] and ICC business models on the proposed process for Projects to report on the economic benefits and CCUS supply chains associated with the development of their CCS Capture Plant projects. We committed to providing guidance and a template for the report, which needs to be completed at each of the reporting milestones. The terms of this requirement have been updated in the ICC Contract and the report template can now be found at Annex 7 in the Contract ("Form of Supply Chain Report:

[49] Dispatchable power agreement (DPA) business model summary and consultation: April 2022 update, see pg. 37.

Part A") and on gov.uk ("Form of Supply Chain Report: Part B").[50] The information provided through these reports will be used to provide the ICC Counterparty and the Secretary of State with key economic, technical and commercial data around the supply chain and the value drivers that underpin it.

Information sharing

The terms of the ICC agreement will protect confidentiality of the parties, but will allow the ICC Contract Counterparty to share information with certain expressly defined parties including: T&S operator, BEIS, NAO, Grant Delivery Partner and any Subsidy Control competent authority, for certain permitted purposes including complying with its responsibilities and obligations under the ICC Contract and the law and reporting on the performance or operation of the project, or allowing the recipient to fulfil or perform its functions or obligations in connection with, or related to, the ICC Contract or wider CCUS programme. We are also considering how transparency of information under the scheme could be promoted, including, for example, by the publication of certain project information and level of government support.

[50] https://www.gov.uk/government/publications/carbon-capture-usage-and-storage-ccus-business-models

Business Model Offer Variations

17. Carbon Capture Usage/Storage Hybrid Projects

We previously confirmed that projects that incorporate CCU with CCS may be eligible for support via the ICC business model, but that support will only be provided in respect of the CO_2 captured and stored (i.e. directed to the T&S network). We also confirmed that CCU only projects are not eligible for support via the ICC business model, although this position will be kept under review for future rounds of allocation.

Notification of intention to conduct CCU and metering

If an Emitter intends to utilise CO_2 they will need to notify their intention to do so before they are permitted to conduct CCU. This applies both to projects that conduct CCU from the start of their Contract and those that intend to start during the course of their Contract.

The purpose of the CCU declaration is to allow the ICC Contract Counterparty to verify that the CCU metering has been installed to an appropriate standard. If an Emitter does not make a declaration about their intention to conduct CCU and have their CCU metering equipment verified, this could lead to the ICC Contract being terminated or payments under the Contract suspended.

Capex payments through the model for hybrid CCU with CCS projects

Only capex required for CCS and capex required for both CCS and CCU will be eligible for business model support. Capex required for CCU only will not be eligible for support. Capex payments made under the ICC Contract will only be paid on CO_2 captured and stored via the T&S Network; capex payments will not be made on CO_2 directed for utilisation.

Projects that conduct CCU from the start of the ICC Contract will have their capex payment rate amended so that it will be determined from the expected amount of CO_2 captured, rather than CO_2 captured and stored. This would mean taking the overall capex figure that is being subsidised under the ICC Contract plus the allowed rate of return and dividing it by the total expected tonnes of CO_2 captured to give a £/tCO_2 figure. The effect of this is that it pro-rates the amount of capex and return payments based upon the storage to utilisation ratio.

Projects that start to conduct CCU during the course of their Contract will not have to have their capex payment rate amended, because the total expected capture amount would have already been used to calculate the capex payment rate and so capex payments will naturally pro-rate based upon the amount of CO_2 sent to the T&S Network.

Where projects receive a capital grant, they will be required to obtain consent from the Secretary of State to conduct any CCU activity noting that the grant's purpose is to support CCS. In granting consent to the proposed CCU activity the Secretary of State will have discretion to impose conditions on the grant recipient, which could include the full or partial repayment of the capital grant. This is to ensure any shift to CCU does not undermine the value for money of the grant.

Opex payments for hybrid CCU with CCS projects

Only opex required for CCS and opex required for both CCS and CCU will be eligible for business model support. Opex required for CCU only will not be eligible for support. The strike price will be paid based on the amount of CO_2 stored. This means that opex payments made under the ICC Contract will only be paid on CO_2 captured and stored via the T&S network; opex payments will not be made on CO_2 directed for utilisation.

Free allowances for hybrid CCU with CCS projects

The forfeiture of FAs uses the capture factor, which considers the amount of CO_2 captured and subsequently stored (i.e. directed to a T&S Network). Therefore, FAs will not be forfeited for the amount of CO_2 utilised.

Payments to sites conducting CCU during a T&S outage event

During a T&S outage we provide compensation based on the Emitter's performance over the previous 12 months. If an Emitter were to increase the amount of CCU that they do in this time they would effectively be paid twice for this (i.e. through the market on CO_2 sales and via the ICC Contract compensation). In order to counteract this risk, if an Emitter conducts more CCU during a T&S outage event than they previously had, the Counterparty will net off the additional amount of CO_2 routed to CCU against the amount of CO_2 that their payments are based on.

18. Combined Heat and Power

Projects deploying CCUS and capturing emissions from a CHP facility will be subject to additional contractual provisions.

An additional OCP for CHP projects is to provide a copy of a valid CHP Quality Assurance (CHPQA) certificate[51]. Every year from the Start Date, the Emitter is required to provide a copy of a valid CHPQA certificate.

To ensure that we are targeting support for CHP that primarily supports industrial facilities, certain CHP projects (CHP-only[52]) will be required to demonstrate supplying energy (heat and or electricity) to at least one industrial facility[53] as an additional OCP.

CHP-only Projects will also be required to report annually the proportion of the energy output (i.e. heat/electricity) from the CHP that has been provided to one or more industrial facility in the previous year. The report would be for monitoring purposes only and the energy output reported as directed to industrial facilities would not impact on ICC Contract payments.

[51] Please note, the CHPQA certificate requirement OCP will not be applicable to EfW projects.
[52] ICC projects that are deploying CCUS and capturing emissions from a CHP facility only and not combining flue gas streams with other industrial process(es). Please note that this does not refer to the combination of multiple Emitters' flue gas streams in a CaaS Group, but the combination of flue gas streams within the wider industrial facility.
[53] For this purpose only, we define an 'industrial facility'' as a facility or part of a facility that is classified under SIC codes 5 to 33 (excluding 24.46). Capture plants that are solely capturing emissions from the CHP facility are also an eligible end-use of the energy output from the CHP, but only where energy output from the CHP is also provided to other eligible industrial facilities.

Except for the additional eligibility criteria described in the Phase-2 guidance document and contractual provisions above, the Conditions offered to eligible CHP facilities will be the same as those offered to ‘generic’ industrial emitters.

19. Waste

In November 2021, it was announced that certain waste management technology CCS projects would be eligible to apply for the ICC business model, including both capital grant and revenue support, for Phase-2 of the Cluster Sequencing process. Whilst there are commonalities between the barriers to CCS deployment for the waste management CCS projects and industrial CCS projects, commercial circumstances and incentives in the waste management sector differ from other industrial sectors that are eligible for support under the ICC model. Given the differences between the waste management sector and other industrial sectors supported under the ICC business model, it was also set out that we would be exploring adaptations to the ‘generic’ ICC Contract to ensure it was appropriate for the waste management sector. Any adaptations to the ‘generic’ ICC business model would lead to a variation of the ‘generic’ ICC Contract being offered for successful waste management CCS projects, referred to as the “Waste ICC Contract”.

The April 2022 and July 2022 updates provided policy updates on the adaptations required for the Waste ICC Contract. This document contains our latest thinking on the Waste ICC Contract with positions set out below.

In addition to this, we have also been developing our approach to the capture of permanent geological storage of biogenic CO_2 and the potential greenhouse gas removals that may arise from this known as negative emissions. These provisions are applicable to both waste management CCS projects and industrial CCS projects so will be contained in both the ‘generic’ ICC Contract and the Waste ICC Contract. More details on the approach to biogenic CO_2 and negative emissions can be found in Section 8 above, and the April 2022 and July 2022 updates on the ICC and Waste ICC Business Models.

Reference price

Given the long-term nature of ICC Contracts, it is important that the Waste ICC Contract is flexible. The application of the reference price should be flexible to the current absence of a carbon price on the sector and the potential for carbon pricing to apply to the sector in the future (as signposted via the UK ETS expansion Call for Evidence). We consider that the reference price for the Waste ICC Contract should be explicitly linked to the waste management plant’s carbon price exposure throughout the term of each Waste ICC Contract.

The application of the reference price must also take into account that CO_2 captured could be either biogenic or fossil CO_2, noting that the split between biogenic and fossil CO_2 will vary as waste compositions are heterogeneous. Biogenic CO_2 emissions under the UK ETS are zero rated and therefore have no associated carbon pricing cost, subject to the biogenic fuel meeting specific sustainability criteria. Therefore, captured biogenic emissions within the Waste ICC Contract will also be zero rated.

Taking flexibility and the zero-rated biogenic content into consideration, an 'Applicable Carbon Reference Price' will be applied in the Waste ICC Contract. The Applicable Carbon Reference Price is one in which the Carbon Reference Price is applied only to emissions for which any future carbon pricing would be applicable to – 'Applicable Emissions'. Therefore, Applicable Emissions are those emissions that, if not captured, would otherwise have been subject to the carbon price. This can be described as:

*Applicable Carbon Reference Price = Average Monthly Carbon Reference Price * Applicable Emissions*

Further details on how the Applicable Carbon Reference Price will impact monthly opex payments can be found in the 'Payment equations' section below.

The Applicable Carbon Reference Price will be zero (0) if the waste sector is not subject to any form of carbon pricing. The Initial Carbon Review process has been included in the Waste ICC Contract to govern how the reference price will change from 0 to market driven and how this market price should be determined. Our expectation is that the Counterparty would draw the Carbon Reference Price from the UK ETS, but if a different form of carbon pricing were to be used, e.g. a carbon tax, then this value would be Carbon Reference Price.

The Average Monthly Carbon Reference Price will be calculated monthly in alignment with the payment schedule. By providing a monthly carbon price, we consider that this provides a balance between volatility, financial planning and representativeness of emitting.

The Average Monthly Carbon Reference Price is expected to draw from publicly available Exchange Delivery Settlement Prices from the daily reports published by ICE[54]. In the possible absence of this price in the future, a suitable alternative would be used. The "monthly average carbon price" for any month would be calculated by dividing the sum of the Exchange Delivery Settlement Prices of the December futures contract as traded on the relevant carbon market exchange for each relevant day in the month by the number of relevant days in the month.

The Applicable Emissions percentage is the percentage of emissions that would otherwise have been subject to carbon pricing. For example:

- If there is no carbon pricing applied to the sector, the Applicable Emission percentage would be zero as none of the captured emissions would be subject to carbon pricing.
- If carbon pricing is applied to only fossil emissions, then the percentage of emissions that are fossil would have the Carbon Reference Price applied to them, whilst the percentage of emissions that are biogenic and therefore do not have any carbon pricing applied to them would not have the Carbon Reference Price applied, in effect receiving a zero-reference price within the Waste ICC Contract.
- If, for some reason, carbon pricing were to apply to all emissions then the Applicable Emission percentage would be 100%.

[54] ICE runs a secondary market exchange where UKA-based contracts can be traded. The most liquid (and therefore likely to be most representative of 'the carbon price') of these is the futures contract expiring in December of a given year. Further information available at: https://www.theice.com/products/80216150/UKA-Futures

Free allowances

In the ‘generic’ ICC Contract, revenue from Free Allowances (FAs) that no longer need to be surrendered under the UK ETS form a potential revenue stream for industrials deploying CCUS will need to be taken into account when determining what is an appropriate level of support. However, this revenue stream is not fixed as there is uncertainty over the price and volume of an industrial’s FAs over the course of the ICC Contract. The ‘generic’ ICC business model seeks to reduce the risk of price volatility of FAs by providing the industrial emitters with predictability on the value of its FAs, with respect to captured emissions, for initial contracts. The ‘generic’ ICC Contract requires Emitters to forfeit their FAs to the government and in return these FAs will be compensated at the value of the reference price for that year. This removes uncertainty for both emitters and government in respect of the price at which FAs can be monetised.

It is unknown whether an Emitter within the waste management sector will receive any FAs if it becomes subject to carbon pricing in the future. However, given that the Waste ICC Contract will link payments to the carbon price, the price risk for Emitters and government is reduced because the price for which any potential future surplus FAs could be monetised will also be linked to the carbon price. Therefore, no mechanism for managing FA price risk is proposed within the Waste ICC Contract. Further, as the waste management sector is not currently subject to carbon pricing and any potential future FA allocation is unknown, we do not consider it necessary to provide volume assurance for FA for Waste Emitters under a Waste ICC Contract (unlike the 'generic' ICC Contract).

Capex payment period

Our position is that capex payments and the return component under the Waste ICC Contract will be based on a target ten-year payment period. This differs from the 'generic' ICC Contract where this is based on a five-year period. Given the different commercial structures present in the waste sector and the lower exposure to international competition compared to other industrial sectors we believe this to be appropriate for the Waste ICC Contract. In addition, as government is still considering when, or if, carbon pricing should be introduced for the residual waste management sector, a longer capex payback period lowers year on year peak spend under the IDHRS scheme for government, particularly in a scenario where carbon pricing has not been introduced when a project becomes operational.

In order to recover their total capex payments, the contracted waste project would need to achieve its estimated CO_2 output to the T&S Network in each contract year. As the capex payback period matches the initial contract payment term, there would not be an opportunity to make up any missed capex payments if CO_2 captured volumes are lower than expected in any year.

Waste Emitters (like Emitters under the ‘generic’ ICC Contract) will have an annual cap on capex payments, which will be set by reference to an estimated maximum quantity of CO_2 delivered by the Capture Plant to the CO_2 T&S Network Delivery Point during the relevant

year. This cap may vary each year, depending on expected changes in production over the Capex Payment Period, and the cap for each year is intended to be agreed during negotiations (see YCCM in Table 6 below).

Payment equations

This section sets out the proposed payment equations that have been developed for the Waste ICC Contract. Table 6 lists the symbols required for the payment equations. This section does not provide the full list of equations but highlights those equations which deviate from the 'generic' ICC Contract. In addition, we are further considering how to structure any deductions that apply to negative emissions, and these have therefore not been included in this section.

Table 6: Payment equation symbols

Symbol	Description	Units
C	Metered CO_2 Output to T&S Estimate for Capex Payment Years 1-10	t
$CO2_{out\_T\&S,i}$	Metered CO_2 Output to T&S during the relevant settlement unit *i*	t
$AMCRP$	Average monthly carbon reference price	£/t
AE_m	The average monthly Applicable Emissions percentage: percentage of emissions captured that would be subject to the carbon price if the Capture Plant were running unabated, i.e. 0 if Waste Emitter is not subject to carbon pricing	%
CP_i	Capex payment for each settlement unit *i*	£
CP_m	Monthly capex payment	£
CP_{Total}	Sum of the capex payments for each settlement unit since the Start Date	£
CPR	Capex Payment Rate	£/t
CP_m	Monthly capex payment	£
OP_i	Opex payment for each settlement unit *i*	£
OP_m	Monthly opex payment	£
NE_m	Monthly negative emission deduction	
r	Total return component	£
S_i	Strike price that applies during the relevant settlement unit *i*	£/t

$T\&S_i$	T&S Payment for each settlement unit *i*	£/t
$T\&S_m$	Monthly T&S payment combining capacity, flow and network components	£/t
TCP	Total capex payment without rate of return (excluding capital grant)	£
$YCCM_{Cn}$	Yearly capex cap multiplier for the relevant Capex Payment Year C*n* which will sum to 1 across the 10 years of the capex payment period. This is the CO_2 capture quantity estimate for year C*n* as a proportion of the CO_2 capture quantity estimate over Contract Payment Term Years 1-10.	-

Settlement and billing

A Settlement Unit of one day (starting at 0:00 and ending at the end of 23:59 of the same day) is the minimum period used to calculate payments that are to be made to or from the Emitter under both the ICC Contract and Waste ICC Contract. A Billing Period, which is the frequency with which payments to/from the Emitter are made, will include the amount which is calculated for every settlement unit in a calendar month.

Payment mechanics

The payment mechanics for the waste ICC business model contract can be broken down into four component parts:

1. Opex payment
2. Capex payment
3. T&S charges payment
4. Negative emission deduction

As all three payments will be paid over the initial 10-year contractual term of the Contract, they can all be considered together, noting that:

$$Monthly\ Payment = OP_m + CP_m + T\&S_m - NE_m$$

In any extension period, capex payments would effectively be 0, whereas opex payments and T&S payments would continue to be paid.

Opex payments

Opex payments throughout the contract will be calculated daily using the following equation:

$$OP_m = \sum OP_i$$

where:

$$OP_i = CO2_{out\_T\&S,i}(S_i - (AMCRP * AE_m))$$

AE_m are the emissions that, if not captured, would have been subject to the carbon price as a percentage of emissions that enter the Capture Plant. If the sector does not have carbon pricing, then the AE_m will equal 0%.

Capex payments

Capex payments paid during operations (not the capital grant) will be paid monthly as the sum of capex payments for each settlement unit in a calendar month:

$$CP_m = \sum CP_i$$

They will be calculated for each daily Settlement Unit according to the following equation:

$$CP_i = CPR \times CO2_{out\_T\&S,_i}$$

where:

$$CPR = \frac{TCP + r}{C}$$

Capex payments are subject to an agreed annual cap so that, in any capex payment year Cn, if $\sum CP_{i,Cn} \geq (TCP + r) \times YCCM_{Cn}$, no further capex payments are made for that year.

Capex payments will cease on the earlier of either (i) once total capex payments are complete, which is when $CP_{Total} \geq TCP + r$ or (ii) at the end of Capex Payment Year 10.

T&S Charges

The composition of T&S charges is set out in the CCS Network Code Updated Indicative Heads of Terms published in December 2022[55].

The T&S charges payment will be paid monthly, where:

$$T\&S_m = \sum T\&S_i$$

Negative emission deduction

The negative emission deduction is subtracted from the payment calculation in the manner described in Section 8, 'Negative emission deduction calculation'.

Symmetric payments

In general, Contracts for Difference operate on the basis of 'two-way' or 'symmetric' payments. The Waste ICC Contract is more similar to a Contract for Difference than the 'generic' ICC Contract, as a result of the Applicable Carbon Reference Price which is market based and therefore could increase to a value greater than the strike price. Therefore, symmetric payments are proposed to apply throughout the Contract Term, i.e., from the Start Date.

The waste ICC Contract pays subsidy payments on a monthly basis:

$$Monthly\ Payment = OP_m + CP_m + T\&S_m - NE_m$$

[55] Transport and storage business model update documents https://www.gov.uk/government/publications/carbon-capture-usage-and-storage-ccus-business-models

The OP_m is calculated using the Applicable Carbon Reference Price, which if this is greater than the strike price can become negative. If negative emissions are permitted, then the monthly negative emission deduction is also negative. If the Monthly Payment calculation:

- Is positive then payments will flow from the Counterparty to the Emitter
- Is negative then payments will be required from the Emitter to the Counterparty.

This aligns with the approach for the extension period of the 'generic' ICC Contract.

Symmetric payments are to be capped. The cap on symmetric payments will occur when the cumulative repayments from Waste Emitter to Counterparty are greater than the payments the Waste Emitter has received through the CIF GFA and the Waste ICC Contract. This assessment will be carried out on a Settlement Unit basis. If the cap is reached and subsequently the payments are required from the Counterparty to the Emitter, these payments will begin immediately with no consideration of "foregone symmetric payments" that would have been owed to the Counterparty if the cap had not been reached. The detailed mechanism of how this cap will be implemented is subject to further policy development and will be provided in the final Waste ICC Contract

The rationale for the inclusion of the grant within the calculation of the cap limit is to avoid any perverse incentives from emitters around whether or not they take the grant funding in order to reach the cap earlier.

Contract extension conditions

The ICC Contract and Waste ICC Contract will provide ongoing revenue support for 10 years, with an offer of support for up to five additional years (assessed on an annual basis) if certain conditions are met. A Waste Emitter will be entitled to request one-year extensions each time, up to a total of five one-year extensions, in the same way as the 'generic' ICC Contract. To receive a contract extension offer, both performance conditions and market conditions will need to be satisfied by the Waste Emitter.

All of the performance criteria that are required for the ICC Contract are required for the Waste ICC Contract (Section 11). In addition to the performance conditions under the generic ICC Contract, Emitters under the Waste ICC Contract that required an R1 efficiency rating as a condition of eligibility (see section below on Technical Requirements) for ICC business model support will be required to continue to hold an R1 efficiency rating to be granted an extension term.

The market condition for Waste Emitters has been adapted to reflect the application of the Applicable Carbon Reference Price and potential negative emissions revenues. An extension can be requested if the Applicable Carbon Reference Price is lower than the subsidy rate (strike price and T&S charges) minus the annual average fallback price applied to the negative emission credits generated as a percentage of total CO_2 captured. The market conditions for an extension are:

$$Strike\ price\ (£/t) + T\&S\ charges\ (£/t) - \left(\frac{NE\ Credits\ Generated\ (t)}{Total\ CO2\ captured\ (t)} * Fallback\ price\ (£/t)\right) >$$

$$Applicable\ Carbon\ Reference\ Price\ (£/t)$$

For waste projects, an additional performance criterion will ensure that extensions will only be available for those projects that are participating meaningfully in the negative emissions markets (i.e. that they are converting close to all of their available biogenic CO_2 into negative emissions). A performance criteria assessment of whether at least 95% of the total biogenic CO_2 has been converted into negative emission credits will be carried out over a 3-year assessment period. The total number of biogenic emissions is not being assessed, only that the biogenic CO_2 that is converted into negative emission credits. A figure of 95% is used to provide some flexibility given the uncertainty of the negative emissions markets. It will be the Emitter's responsibility to demonstrate to the Counterparty that they are achieving at least 95% conversion, through providing supporting evidence.

Extension period payment mechanics

In the 'generic' ICC Contract, if a project continues into the extension period, the ICC business model transitions from a fixed reference price trajectory to a market-based UK ETS reference price. The Waste ICC Contract is a market-based model from the start and therefore the payment mechanism that is applicable in the first 10 years of the Waste ICC Contract will continue into the extension period.

In addition, if the restriction on negative emissions has been lifted prior to the extension period, the negative emission deductions and other provisions will continue in the extension period.

Technical requirements

R1 status

Government intends to support facilities that maximise the energy value of waste, aligning with the Resources and Waste Strategy for England, as well as the respective waste strategies for Scotland, Wales, and Northern Ireland. Therefore, an R1 efficiency rating was required as a condition of eligibility for certain waste management technologies. To ensure we continue to support only more efficient waste management plants, the Waste ICC Contract will include R1 efficiency requirements (using the definitions of R1 set out in the relevant legislation at the outset of the Contract) where R1 efficiency rating was required as a condition of eligibility under Phase 2 (see Table 7). Confirmation of the R1 efficiency rating (as applicable at the outset of the Contract) from the relevant competent authority will need to be provided to the Waste ICC Contract counterparty to fulfil the following conditions:

- An R1 efficiency rating will be required as an additional OCP.
- An R1 efficiency rating will also be required as a condition of payments throughout the course of the contractual term (as an additional Emitter Undertaking). If an applicable plant loses its R1 efficiency rating (as confirmed by the relevant authority), then payments under the Waste ICC Contract will be ceased until the R1 efficiency rating is regained. Once R1 efficiency rating is regained, the Waste Emitter will not be entitled to receive any payments for CO_2 captured that were ceased from the date on which the R1 efficiency rating was lost. The R1 efficiency rating will be grandfathered at the point of contract signature.

- An R1 efficiency rating will also be required as an additional performance condition of an extension period (more information on the extension provisions is set out above.)

Table 7: Efficiency requirements for waste management technologies[56,57]

Technology / Sector	EfW (Incineration / combustion of MSW and/or CW with energy recovery)	ATT / ACT			HWI
		Gasification to energy (electricity and/or heat) only	Gasification to molecule (chemicals or fuels	Pyrolysis	
Efficiency Rating	R1	R1	Not Applicable		

Determining the monthly fossil and biogenic CO_2 percentage split

Measuring the relative fossil and biogenic CO_2 captured is required under the Waste ICC Contract to ensure that the opex payment calculations are accurate and timely, when determining the application of the Applicable Carbon Reference Price.

The Waste ICC Contract Biogenic CEMS rider outlines the procedure for Emitters to determine the proportion of biogenic and fossil based CO_2 content of emissions that are captured, including the permitted methodology and a mechanism to report this data from the Start Date to the Waste ICC Contract Counterparty.

Given the heterogeneity of fuels and feedstocks, measuring the gaseous stream of CO_2, rather than the composition of the fuel or feedstock itself, should provide a more accurate assessment of the biogenic/fossil CO_2 percentage split. Government considers that the continuous measuring of the gaseous stream is required to ensure a robust and accurate measurement of the biogenic/fossil CO_2 percentage split is reflected in the calculation of the monthly Applicable Carbon Reference Price. We have assessed the methodologies available and considered how these could be integrated into the payment mechanism. We consider that carbon-14 analysis on a monthly composite sample, collected using a biogenic CO_2 continuous emission monitoring system (CEMS), will provide a representative, robust and accurate measurement. This sample will be analysed, at an accredited laboratory, to provide a monthly biogenic and fossil CO_2 percentage that is representative of the CO_2 captured for the entire month. No further methodologies will be permitted under the Waste ICC Contract. BEIS will continue to build the evidence base of different methodologies for consideration in future Contracts.

Further details on determining the biogenic and fossil CO_2 percentage split can be found in the Waste ICC Contract Biogenic CEMS rider. Additionally, it is intended for further technical details on the requirements for determining the fossil and biogenic CO_2 percentage split to be set out in the 'Biogenic CEMS Technical Specification' in 2023.

[56] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1043088/ccus-cluster-sequencing-phase-2-guidance.pdf

[57] Terms used in the table are defined as the following: Energy from Waste (EfW); Municipal Solid Waste (MSW); Clinical Waste (CW); Advances Thermal Treatment (ATT); Advanced Conversion Technologies (ACT); and Hazardous Waste Incinerators (HWI).

Requirements for determining the fossil and biogenic CO_2 percentage split

This section outlines the details for determining the monthly biogenic and fossil CO_2 percentage split, the consequences of non-compliance with such requirements, and the calculation of the monthly fossil percentage and opex payment.

Determining the monthly fossil and biogenic CO_2 percentage split:

1. The Biogenic CO_2 CEMS requirements will apply from the Start Date and will be tested as an OCP.
2. The biogenic CO_2 CEMS will be required to sample for the entire period of each month to form a composite monthly sample. For the composite sample to be deemed as valid, the biogenic CEMS will be required to sample for [95%][58] of the time during which the installation is operational and CO_2 is being produced.
3. The composite sample will need to be analysed at an accredited laboratory (to be prescribed in accordance with the 'Biogenic CEMS Technical Specification') and the Emitter will be required to provide the Waste ICC Contract Counterparty with a laboratory report detailing the monthly biogenic CO_2 percentage, by the last business day of the third calendar month that falls after the monthly billing period being considered. Further details on the biogenic CEMS requirements can be found in the Waste ICC Contract Biogenic CEMS rider.
4. Additionally, the Emitter will also be required to comply with the requirements to be set out in the 'Biogenic CEMS Technical Specification', which is to be developed in 2023. BEIS is still considering any requirements for the Emitter to provide an independent third-party technical audit report confirming compliance with the 'Biogenic CEMS Technical Specification'. Further details on this position will be outlined in the 'Biogenic CEMS Technical Specification'.
5. The 'Biogenic CEMS Technical Specification' will provide further details on the biogenic CO_2 CEMS locations and whether more than one biogenic CO_2 CEMS at the Facility is required to achieve a representative monthly sample. If more than one biogenic CO_2 CEMS is required then the overall facility fossil percentage, which will be applied to the Applicable Emissions percentage, will be a weighted average of each fossil percentage with the associated CO_2 flow.

Consequences for non-compliance

6. In respect of the period between the Start Date and the date on which the waste sector is exposed to carbon pricing (if applicable), a fee will be payable by the Emitter for any non-compliance with the requirements set out in paragraphs 2, 3 and 4 above.
7. The fee will be assessed on a per biogenic CO_2 CEMS basis and only one fee per biogenic CO_2 CEMS will apply per month of non-compliance. The fees payable by the Emitter will

[58] Subject to reconsideration following the finalisation of 'Biogenic CEMS Technical Specification'.

increase over time if multiple non-compliances are identified on a 12-month rolling basis, as summarised in Table 8 below.

Table 8. Fees associated with non-compliance, if carbon pricing does not apply to the sector

Month(s) during which a non-compliance was identified per biogenic CO_2 CEMS	Monthly fee per biogenic CO_2 CEMS non-compliance
1	[£1000]
2	[£2000]
3	[£4000]
4	[£6000]
5 or more	[£8000]

8. In respect to a period from which the waste sector is exposed to carbon pricing (if applicable), any non-compliance with the requirements, as set out in paragraphs 2 and 3 above, will result in the fossil percentage for the relevant biogenic CO_2 CEMS to be deemed at 100%. Additionally, in some instances, non-compliance with the requirements that will be set out in the 'Biogenic CEMS Technical Specification' may result in the relevant biogenic CO_2 CEMS fossil percentage being deemed 100%, however the detail of such 'deeming' provisions will be set out in the 'Biogenic CEMS Technical Specification'.

Calculation of monthly fossil percentage and opex payment

9. In respect to a period from which the waste sector is exposed to carbon pricing (if applicable), a proxy value will be required for the relevant month until such a point where that data becomes available. The use of proxy data is required because the carbon-14 measurement methodology requires a sample to be collected and sent to a laboratory for analysis, which may lead to a time lag between understanding the relevant biogenic CO_2 CEMS fossil percentage and payment being due under the Waste ICC Contract for the relevant payment month. The Waste ICC Contract Counterparty will calculate or recalculate the applicable monthly fossil percentage at the following points in time:

   a) Initial monthly opex payment calculation;

      - If the date that the Waste sector becomes exposed to carbon pricing occurs less than four months after the Start Date at the time of the relevant opex payment calculation, a proxy value of [50%] will be used as the facility fossil percentage applied to the Applicable Emissions percentage on the basis that no 'actual' data is likely to have been collected by the Emitter at that point in time. However, such proxy value of [50%] will only be applied during the initial four months, and will not be applied if there is a more up to date facility fossil percentage that has been applied to the Applicable Emissions percentage as a result of any 'Initial Recalculation' or 'Final Recalculation' (see paragraphs (b) and (c) below).

- If the date that the Waste sector becomes exposed to carbon pricing occurs more than four months after the Start Date at the time of the relevant opex payment calculation, the most recent month's facility fossil percentage that has been applied to the Applicable Emissions percentage will be used to calculate the initial monthly opex payment calculation (in accordance with the 'Initial Recalculation' and 'Final Recalculation' processes summarised below).
- Please note that in both scenarios listed above, when calculating the relevant opex payment, the most recent month's facility fossil percentage applied can be from a laboratory report that has been provided when carbon pricing does not apply to the waste sector. The laboratory report will need to comply with the requirements as set out in Waste ICC Contract Biogenic CEMS rider and the 'Biogenic CEMS Technical Specification'.

b) Initial Recalculation;

- The facility fossil percentage will be recalculated once the Emitter has provided all the required information in accordance with paragraphs 2, 3 and 4 above. If the Emitter has not provided all required information by the last business day of the third calendar month that falls after the monthly billing period being considered (the 'Initial Recalculation Deadline'), the fossil percentage for the relevant biogenic CO_2 CEMS will be deemed 100% (subject to any further Final Recalculation).

c) Final Recalculation;

- If the Emitter has provided all the required information in accordance with paragraphs 2, 3 and 4 above, then the 100% fossil percentage 'deeming' value applied to the Applicable Emissions percentage as a result of the Initial Recalculation will be reconciled using the laboratory value during the Final Recalculation.
- If the Emitter has not provided all the required information prior to the 'Initial Recalculation' deadline (see paragraph (b) above), the Emitter will be required to provide the Waste ICC Contract Counterparty with a monthly laboratory report detailing the biogenic percentage, by the last business day of the sixth calendar month that falls after the monthly billing period being considered. Any laboratory reports that are submitted after this six-month deadline will not be considered and the 100% fossil percentage 'deeming' value will remain applicable for the biogenic CO_2 CEMS to which such report(s) relate.

Pre-award Process

20. Negotiations

The majority of provisions of the ICC Contract and GFA will not be negotiable on a per-project basis, with a standard set of terms applying. The primary items that will be open for negotiation, to reflect the circumstances of individual projects, will be elements of the capex payment rate and strike price, the size of the capital grant and profiling thereof, and elements of the opex reopener. HMG retains the right to draw additional aspects of the business model into negotiations on a discretionary basis.

The terms offered during negotiations will consider the wider impacts of final project selection on the risk profile and resilience of the Track-1 Cluster Plans. This includes taking into account the subsequent plans for the clusters and other additional Emitters and ensuring the cost of extending the T&S Network to each project remains satisfactory. Any decision to award support at any stage of this process will only be made subject to government being comfortable with; the application of subsidy control requirements, any balance sheet implications, the status of any relevant statutory consents and that the project represents value for money for the consumer and the taxpayer and is deliverable. It should also be noted that any decision to award support may be contingent on wider factors including finalisation of agreements with relevant T&S Networks as well as the development and Parliamentary approval of any necessary legislation.

The scope of negotiations has been communicated to projects invited to participate in the negotiation/due diligence stage following the outcome of the Phase-2 evaluation process. Shortlisted projects are now undergoing due diligence. Please see the Phase-2 guidance document for further details[59].

HMG may set bespoke timetables for carrying out these negotiations as a result of anticipated variation between each Track-1 T&SCo's timetable and maturity of projects. Following successful negotiations, the ICC Contract and, where relevant, the capital grant will be offered to eligible projects. Where projects receive both a Contract and a capital grant, these will be offered as part of a single package of support.

21. Contract and Grant Agreement Structure

Successful industrial Emitters will receive an ICC Contract that will set out Conditions for revenue support payments and, where relevant, a GFA which will set out terms and condition for any capital support payments. The ICC Contract will be entered into by the industrial Emitter and ICC Contract Counterparty. The GFA will be between the entity which is responsible for funding the development of the relevant Capture Plant and BEIS.

[59] See footnote 41

Next steps

The ICC Contract, Waste ICC's Biogenic CEMs rider, and ICC GFA published alongside this update document are considered to be broadly final versions, prior to detailed negotiations and final investment decisions for Track-1 / Phase-2 projects. These publications, alongside the Waste ICC Contract Summary Table will provide waste projects sufficient understanding of the commercial proposals to begin negotiations.

It is noted that a number of provisions including, in particular, technical provisions such as free allowances, pre-capture measurement and post-capture metering, and the monitoring of biogenic and fossil CO_2 are to be updated and set out in 2023. The technical provisions are considered to have no material impact on any commercial elements of the contract and therefore finalisation of those provisions should not impede the ability for negotiations to begin with shortlisted projects in the meantime.

The exact timetable for negotiations is to be confirmed, but this will be updated to shortlisted projects in due course.

As set out in the disclaimer, the updates published within this document, accompanying contracts, are not final and are subject to further development by the government, and approval by Ministers, in consultation with relevant regulators and the devolved administrations, as well as the development and Parliamentary approval of any necessary legislation, and completion of necessary contractual documentation and negotiations process. We reserve the right to review and amend all provisions within the document and accompanying contracts published alongside this document, for any reason and in particular to ensure that proposals provide value for money (VfM) and are consistent with subsidy control principles.

We anticipate that the final terms that are entered into with successful projects will be published in some form, subject to the consideration of commercially sensitive information.

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